# The Builder.

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### *In the Matter of Chichester Cathedral.*

A CONTRACT for rebuilding the north-west tower at Chichester Cathedral has been signed and preparations for the work are now being made in the shape of the erection of scaffold poles. If it seems rather odd that the intention should have been pretty nearly kept a secret, and that even when an illustration of the west front as proposed was published in a local paper the architect's name was suppressed, that is easily accounted for by a natural desire on the part of the Dean and Chapter to avoid the foolish but irritating newspaper letter persecution to which the custodians of all ancient buildings are now subjected as soon as it is known that they mean to make any alteration, repair, or addition to the buildings in their charge, and also by the fact that the name of Mr. Pearson, who is in fact the architect for the work, appears to act on the temper of these critics like a red rag on that of a bull. The reason for this peculiar animus against Mr. Pearson is, we presume, that he is regarded as the natural successor to Scott, who was the butt of these kind of attacks during his lifetime (with rather more cause in some cases); and, Scott being safe in the grave, the dose is served on his successor.

The attempt has already been made to raise the usual hue and cry against the Cathedral authorities, but not, so far, with much success. A violently expressed letter from "A Sussex Churchman" in the *Times* a few weeks ago elicited no comment; and a few days ago the same journal published a long protest from the Secretary of the Society for the Protection of Ancient Buildings. After recent events, it may be doubted whether the public will give much more attention to the protests of the Society, and in fact we had some doubts whether the Society had not practically been beaten out of existence; for it is significant that their usual Annual Meeting was not held this year; or if it was, it was held with closed doors. There must have been a reason for that; at all events it is rather a collapse after the bellicose language used by a member at the meeting of the previous year, who congratulated his colleagues on the fact that the Society "was beginning to be feared;" and we are almost led to doubt whether the Society now really means anything more than the private opinion of Mr. Thackeray Turner and one or two of his friends. The Society (if there be one) has done good on some occasions, and might have done much more if it could have been reasonable; but it (or he) has cut the ground away from under its (or his) own feet by persistent intolerance and unreasonableness. In the present case there is one point, to be mentioned just now, in which we agree with the protest, but it would have far more weight if it were not coupled with so much that is exaggerated and foolish.

The proposed work at Chichester, and the right or wrong of it, affords an illustration of that distinction between architecture as design and architecture as history which persons of "anti-scrape" tendencies cannot be got to perceive. To them ancient architecture is entirely history and nothing else (at least judging by their public speech and action), and it is all of equal value whatever the design, whether a mere wall or an elaborate piece of decorative work; an ancient building with one side gone is as sacred as an ancient building which is a complete architectural design. Now we maintain that ancient architecture has its claim to be considered as design as well as history.

The west front of Chichester is now in an incomplete state. The south tower is complete, the north tower is gone except a portion of the lower part of the walling, which is finished by a raking battlemented coping of debased Gothic work, terminating in a turret of similar work. It is difficult to understand exactly what has been done with a portion of this walling, for it looks like Norman walling, but there is a straight joint in each face of the outside of the north-western bay of the nave, leaving on either face a narrow perpendicular strip of undoubtedly untouched work, divided by the straight joint from the broader mass, which may perhaps have been built up again to a certain height, with the same stones, after the tower fell. But however the west front came into its present state, it is, as a matter of design, in an incomplete and lopsided condition, and looks very bad. The south tower is there as a model; the rebuilding of the north tower on the same lines is merely the completion of an architectural design of which one side has been destroyed. Now this is quite a different thing from that other form of restoration, in which Scott indulged so much (though it must be remembered that in the early part at least of his career he did so with the support of the general feeling and opinion at that date), and which consists in conjectural restoration of something which has altogether gone, by a process of reasoning from the piecing together of some few remains of portions of the ancient work. That is a kind of restoration which is of no value; the new thing is not the old thing; we cannot even say that it is like the old thing; we can only say, at the best, that something of that kind was once there. But the completion of a symmetrical design of which one half exists complete stands on quite a different footing. Here art comes in; we are completing a known architectural design which has been partially destroyed. But that is just what the "anti-scrape" mind cannot see. Mr. Thackeray Turner girds against "this useless tower," this "proposed sham Norman tower," and so on. It is not "useless"; it is wanted to complete the architectural ordinance of the west front; and as for being a "sham," there is no occasion for any pretence whatever; it is perfectly possible to build in an inscription in permanent material stating when and by whom the tower was rebuilt, so that the archæologist of future days may not run any chance of being deceived.

Another point that has been raised is that it is proposed to build upon the remains o the old work, and that this may not be strong enough for that purpose, and then, we are told, the excuse will be made for pulling down all the north-west bay of the nave in order to rebuild it in such a manner as to safely carry the new tower. "That would be scanned," as Hamlet says. It is we presume for that reason that Mr. Turner, with the unconscious humour which so often marks the reports and criticisms of the S.P.A.B., speaks of building a new tower as "a work of destruction." It appears to us to be a work of edification. However, it must be admitted that portions of the outside walling look rather shaky, though the stone itself (several trial

holes have been cut) is apparently in good condition; and part of the wall over the western arch of the arcade, as seen from the exterior, is also not in the best condition. But as far as this last is concerned it must be remembered that there is not much weight to add to it; what would be the south wall of the tower already exists, over the nave arch, for the greater part of its height; the addition to be made to carry it up level with the south tower does not amount to very much, and the wall seems capable of being sufficiently strengthened without pulling down the work. The other walls could be strengthened from the inside without destroying their outer faces, which besides have no detail on them of any kind that needs special care. As seen from inside the cathedral, the ground floor and triforium arches do not appear to be in any worse condition than those on the opposite side, which are carrying the north wall of the south tower. Therefore we do not see that the rebuilding of the north tower need occasion any damage to the existing substructure, if carried out with the care and caution which Mr. Pearson is sure to bestow on it. And at all events, we protest against it being described as a "useless" tower. It is not useless, it is an essential part of the complete architectural design of the front, which without it is incomplete and sorry-looking.

The one point in which we do agree with Mr. Turner is in regard to the proposal, which we know was originally entertained, but about which nothing definite has been done at present, to place a square timber and lead-covered spire on each of the towers. Those might be described as "useless"; they are not necessary and they would not in our opinion add anything to the general appearance of the cathedral, which will look quite sufficiently dignified with the two towers completed in masonry. Moreover, to put a spire on the ancient south tower may put it to a strain which it is not now very fit to bear, and to put one on the rebuilt north tower will increase the difficulty of dealing with the weak portions of the old wall at the base. Such spires would not harmonise at all, in an architectural sense, with the central spire; and moreover they will overshadow and diminish the effect of the campanile which stands at about 60 ft. from the north end of the west front, and which, as every one knows, is one of the finest and most interesting things in connexion with Chichester Cathedral. For all these reasons we are opposed to the building of these west-end spires, and believe the completed elevation will even look better without them, more especially as, owing to the nature of the site, which is cramped and confined in that direction, there can be no general view of the west front from a distance. We hope, therefore, that the idea of the spires will be abandoned.

In the almost summer-like weather of Wednesday last Scott's modern central tower and spire, built after the fall of the ancient tower in 1862, looked remarkably fine; it forms a convincing example of Scott's extraordinary and complete knowledge of Gothic architecture. The carving would no doubt tell its tale on close inspection, but at a distance it would not be very difficult to believe it a genuine mediæval structure which had been scraped and rubbed to a new face. It looks as beautiful as a piece of mediæval work; which we suppose we shall be told is so much the worse. Well, what would the "anti-scrapes" have done? The fall of the ancient tower at least was no one's fault. Would they have left the fragments to lie where they fell, and the building to be deserted and go to pieces? Or ought the tower and spire to have been rebuilt on another and not a Gothic design, as a palpably modern and nineteenth-century piece of work? That raises a contingent question on the principle of restoration. The case was an exceptional one. A perfectly new addition to a mediæval building, for a practical purpose, might reasonably, perhaps, be treated as a modern building; only it would have, in an architectural sense, to harmonise with the design of the ancient portion of the building. In the case of Chichester tower and spire we hold that the right thing was done. The architectural beauty and completeness of the cathedral have been preserved, to a degree in which no other course would have availed to preserve them; and on the whole we may thank Scott for having done it so well.

## LORD GRIMTHORPE'S LATEST EFFORT.

A COMMUNICATION which we received the other day from St. Albans, expressing the greatest indignation at the manner in which St. Michael's Church has been treated by Lord Grimthorpe, led us to make a visit to the place to see whether the facts were as bad as they were represented to be. Our conclusion after an inspection of the building is that it is even worse than we were led to expect, and that Lord Grimthorpe's last addition to the church architecture of St. Albans is the most absurd and mischievous piece of work he has done, though of course in one sense it is not of such importance as the additions by which he has defaced the Abbey.

St. Michael's is a small but very interesting Late Gothic church standing in a secluded position a little way out of the town. Its exterior architecture, though presenting nothing that is very striking, is remarkable for its quiet and picturesque character. The small north-west tower, though of no particular architectural interest, harmonised with the general appearance and grouping of the whole structure. It was, however, in a somewhat dilapidated condition, so much so that it was urged in some quarters that it ought to be entirely rebuilt. Whether this was really necessary, or whether some repairs and underpinning would not have met the case, is a question on which we cannot now express an opinion, the tower being no longer there to speak for itself. But its condition evidently appeared to Lord Grimthorpe to promise him an opportunity for another restoration job to amuse himself with, and he offered to rebuild it at his own cost provided he were allowed to do what he liked with it. A wealthy inhabitant of a small town has of course a good deal of local influence to assist him in getting his own way, which is no doubt one reason why Lord Grimthorpe's architectural ministrations have been confined to St. Albans; he would not be likely to get a hearing anywhere else. As it was, there was a good deal of opposition to the proposal, made at a meeting last year, to hand over St. Michael's to him as an architectural plaything; and no wonder, with the examples of his architecture which the inhabitants had before their eyes. The objectors however seemed to have been out-voted after the utterance of Lord Grimthorpe's usual formula—"You can have it on those terms or not at all." It is amusing to note that in the petition to the Chancellor of the Diocese, read by Lord Grimthorpe at the meeting, he quoted the authority of Scott to the effect that "the tower needed thorough restoration." The opinions of architects are only of weight with Lord Grimthorpe when they can be twisted into a support of his demands; when they are against him, architects are ignorant persons actuated by selfish and reprehensible motives.

The promise was that the tower would be rebuilt on the old design, only a story higher. Of course, if it was to be entirely rebuilt there would be no particular virtue in copying the old tower; it would not be the same thing as the original work, and it might be better not to copy it, but to make the new tower ostensibly a nineteenth-century addition. The important condition would be that it should harmonise in style and feeling with the ancient building to which it was attached.

The result has been the very opposite of this. The body of the church is late work of an exceedingly quiet and unobtrusive type, the exterior reveals to the windows being very shallow, and the glass-plane not much recessed from the face of the walls. Lord Grimthorpe's notion of harmonising the new work with the old is to introduce windows with a cavernous depth of reveal, which he

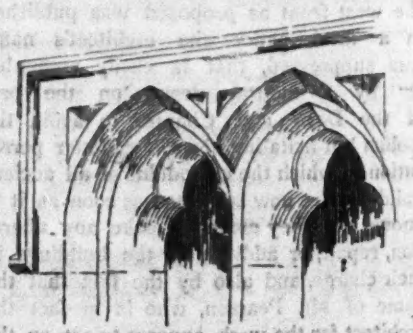

FIG. 1. Striking treatment of two-light window.

then does not know how to manage, and the outer member of the splay is left to mitre and hang over the mullion, as in the sketch of one of the tower windows shown in fig. 1. Observe also the apex of the window coming *above* the line formed by the small spandrel oilets, the use and meaning of which he evidently does not in the least understand. Here is a man taking in hand church restoration without even a knowledge of the A B C of Gothic detail. As to the decorative detail, the style of that may be surmised by the sketches we give of the ornament in the west gable (fig. 2) and the boss which forms a label-stop to the north doorway (fig. 3); things commonplace in themselves and utterly out of keeping with the style and feeling of the ancient building. There are other gimcracks of this kind on the tower, in which Lord Grimthorpe seems to have been desirous to show how many absurdities he could cram on to a very small tower. The whole feeling of the place is destroyed by this

modern excrescence stuck on to it. The extraordinary thing is that people should be found so foolish as to give up their ancient buildings in this way into the hands of Lord Grimthorpe, and talk of his "generous offer." There is no generosity in the matter. Lord Grimthorpe has a craze for acting as an amateur architect, and has money enough to purchase from the St. Albans people the right to hack about their ancient buildings for his own amusement. If he were to say "this building is in need of repair, get it done in the best possible manner and I will defray the cost," he would earn the gratitude of every one; but as it is, this so-called generosity is only a form of selfishness and vanity, ministered to by some foolish people who think that

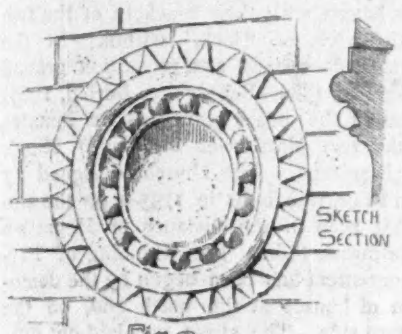


Fig. 2.

Fig. 3

because a man can pay for a building he is competent to design it. If Lord Grimthorpe is so anxious to exercise himself as an architect, let him re-build his own house, or build houses for his friends (if they will let him), and as long as he keeps them well out of sight no one will complain; but it is too ridiculous that he should be allowed to botch ancient buildings just as he likes, because he can afford to pay for it.

We have never visited St. Albans since the day when we made an excursion there to look at the then newly-completed west front of the Abbey. The sight of that acted as a pretty strong deterrent against further visits. A fresh look at it after that lapse of time entirely confirms us in the justice of the opinion we then expressed; and in fact, the effect of the angle turrets is even worse than we had remembered. The treatment of the south transept, with its railway station turrets, could be sufficiently judged of from a photograph; but an inspection of the north transept on the spot leads one to conclude that nothing but actual inspection can enable any one to do justice to it. The window does not look quite so bad from inside as from outside, as the attention is more directed to the spaces than to the lines, and an artist in stained glass might do something with it. But the external appearance of this huge window, made up of circles of different sizes stuck round in rows like coins on a table, must be seen to be realised; it really impresses one as the work of a lunatic. It has been too much for some of Lord Grimthorpe's own friends, to our knowledge. Perhaps when the St. Albans people fully realise that every one is laughing at them for their complacence to Lord Grimthorpe, they may be induced to put their foot down and resolve that there shall be no more of it. Unfortunately, most of the possible mischief is done now.

## NOTES.

The Engineers' Strike.

It is to be hoped that the Conference which is now at last arranged between the engineers on strike and the employers will lead to the conclusion of the long struggle. Every one has read the terms of the Conference in the daily papers. It appears to us that they embody the victory of the employers, as was inevitable. The strike notices in regard to the forty-eight hours week being withdrawn, one main contention of the men is gone. As the latter also agree not to interfere in the management of the employers' works, the great aim of the employers seems to be attained. That the employers agree not to interfere with the legitimate action of the unions merely asserts what they have all along declared was the fact, that for purely protective purposes they had nothing to say against trades unions. But if the men accept defeat under the guise of a Conference, no one can complain—public appearances have to be saved, and leaders have to justify their action to those whom they have impoverished uselessly.

An International Congress of Architects in London.

Some weeks back we spoke of the possibility of having an International Congress of Architects in London, and pointed out how popular such a gathering would be abroad, and how useful it would be if well managed. We find that the Amalgamated Societies of German Architects suggest the consideration of having an International Congress in Germany. The constant selection of Paris is apparently everywhere unpopular. Our German contemporaries now suggest that if Paris is to have a Congress in 1900, London might very well have one in 1902, and Berlin could follow in about 1904-1905. Our French contemporary, *Construction Moderne*, on the other hand, seems to favour our proposal of the London Congress taking place prior to the next gathering at Paris, and the *Deutsche Bauzeitung* also appears to agree with this, in which case the order would be—London 1898 or 1899, Paris 1900, Berlin 1902. Seeing how our suggestion of having a London Congress has been taken up, it would seem a pity if something could not be done in the matter, but, as we have said, the English profession as a whole would have to do the honours of the country, and personal or professional differences would have to be disregarded. If that could be brought about, it would in itself be one of the best results of the conference.

Railway Works in Paris.

The works for the future line from Courcelles to the Champ de Mars are being actively pushed forward. Between the Place Pereire and the Trocadéro Station, lines of straight stone walls are already replacing the former irregular contours along the margin of the Ceinture railway, as a preparation for doubling the tracks. Between the Trocadéro Station and the Rue Raynouard at Auteuil, a long tunnel, passing under the whole central portion of Passy, has been carried out, without interference with the traffic. Beyond the Rue Raynouard the line will be continued on a viaduct and will cross the Seine at the Ile des Cygnes. The railway will be ready before the 1900 exhibition. Its cost will be about twenty million francs.

The Parthenon.

According to a correspondent of the *Standard*, the Archæological Society at Athens has decided to resume the works "for the restoration and strengthening of the ruins of the Parthenon." The English Company which is working the marble quarries at Pentelicos has offered for the purpose marble blocks of excellent quality and large size. We should like to know what is the meaning of the word "restoration." It is a dangerous expression to introduce in speaking of the Parthenon.

The Hamburg Town Hall.

On the 1st of this month the Town Hall at Hamburg was practically completed, and the various officials took possession last week. Taken as a whole, the Town Hall is certainly a success in an architectural sense, but unfortunately the site, as we remarked long ago, is cramped, and the building dwarfs its surroundings, and even on the opening day the accommodation afforded to the various administrations was not sufficient to allow for any considerable extension, whilst the situation presents no opportunity for future additions. Architecturally, the exterior is certainly far more successful than the interior, where, in fact, the "tavern," or restaurant in the cellar, is certainly the most interesting part of the building. Nearly all the reception rooms and the council chambers are coarse in detail and commonplace in design. The design, it should be remembered, was in the hands of nine architects, and though Herr Haller assumed the lead, it can be scarcely said that any individuality is observable in the work. The original estimates were for 4,500,000 marks, or about 225,000*l*. In 1889 the estimates were raised to 350,000*l*., and at present the expenditure is said to have been about 500,000*l*. The whole of the work in the building was carried out by Hamburg contractors, and everything executed, as far as possible, locally; but if we compare the workmanship with that of other German cities, we are afraid it will be found that this local patriotism has been carried too far.

Architecture and Railways in Berlin.

It is characteristic of the manner in which public work is being done at Berlin at present that Messrs. Siemens & Halske, who are executing the new electric overhead railway, have opened a competition for the architectural treatment of this railroad; 550*l*. are offered in premiums, and there will be a very influential committee of assessors. The idea of a new railway company disfiguring the city at its pleasure is practically impossible nowadays at Berlin, public opinion being sufficiently advanced to resent anything that would tend to spoil the appearance of the capital.

Fire-resisting Building at Hamburg.

Hamburg is well known for its extensive warehouse fires, and there has been considerable discussion as to the small resistance offered by the more recent forms of iron construction adopted when the new storehouses and sheds were erected, some ten years back, on the creation of the Free Port. The authorities at Hamburg have under-

taken a series of experiments and tests of which the concluding Report has now been issued, and in which cast-iron, wrought-iron, steel, and timber work, various forms of plastering, terra cotta, etc., have been the subject of inquiry. The practical outcome may be seen in some new warehouses which have been lately completed under the direction of Messrs. Schrader of Hamburg, and which may be said to be models from a fireman's point of view. We here find a very careful isolation of the different "risks," an excellent arrangement of the staircases, and (what will be surprising to many) the return to oak work for the main supports and flooring, though this is only what the evidence and experience of late years seemed logically to point to. From the student's point of view, it would be very instructive if there should soon be a fire on these premises, so that comparison could be made with the effects already known on the warehouses where iron and so-called "fire-proof" flooring have been so extensively used. The question is of considerable importance to Hamburg, as some extensive harbour works have been commenced this month, and the type of warehouse plan will soon have to be decided on.

Eight Hours Arguments.

We showed in these columns a few weeks ago how the fallacy of one of the pet theories of the Amalgamated Engineers was demonstrated by a resolution passed at the Trades Union Congress. Now we have one of their most prominent supporters owning that "it might have been wiser if the men had said to their employers 'Give us the eight hours' day and we shall be content with wages corresponding to the amount of work we turn out.'" We very much doubt if this is the sort of wisdom which commends itself to the men, or that they would be so easily contented; but if they would only listen to their candid friends, they might very possibly be at work again in a very short space of time. We are told in the article from which we have just quoted, that the men have set their hearts on a little more leisure, and that "there are hundreds of skilled artisans in London who from their boyhood upwards have been working from *six in the morning till nine at night*." Now, the action of the engineers would have been far more intelligible, and would have commanded far more sympathy, had they struck against such a monstrous and intolerable system. But they did nothing of the sort, and it is difficult to see how a nominal eight hours' day will secure much more leisure for the men in shops where they are being worked from six in the morning till nine at night under a nine hours' day.

Electric Traction.

The paper on the "Mechanical Features of Electric Traction," read by Mr. Philip Dawson last week before the Institution of Mechanical Engineers, whilst bringing forward nothing startlingly new, yet duly emphasises the great progress that has been made in traction design during the last ten years. In the early days motors using double reduction gear had very seldom an efficiency as high as 60 per cent. Now, with single reduction gear, an efficiency of 80 per cent. can be secured over a wide range. The absurdity of the common practice of rating motors in terms of horse-power instead of by torque at the car wheels was pointed out. The requirements of engines for use in power stations were mentioned, and Mr. Dawson stated that in some cases it was insisted on that there should not be a variation of 1½ per cent. in the speed of an engine when the normal load was thrown on and off. The fly-wheels have to be made much heavier than for ordinary electric-lighting work, and as the strains they are called on to bear are enormous the utmost care has to be taken in their design. This has led to fly-wheels being built up of rolled plates. He stated that some of the fly-wheels used in tramway-stations can be stopped in less than one revolution with perfect safety. Tables were shown from which it appeared that the commercial efficiency of large modern American tramway generators was over 90 per cent. at quarter load and 95 per cent. at full load. The insulation of these dynamos has to stand a great strain, as one of their poles is put to earth. We were disappointed that Mr. Dawson did not touch on "surface contact" or "conduit" systems.

Metropolitan Improvements: the Marshalsea, and Parliament-street.

The London County Council have sanctioned (see our report of their proceedings, p, 352, *ante*) an expenditure of 207,400*l.* for the widening of Long-lane and an extension of Tabard-street (formerly Kent-street) through St. George's Churchyard, into High-street, Borough. The new street will absorb, it seems, what is yet left of the later Marshalsea Prison, familiar to readers of "Little Dorrit." The site was originally that of the "White Lion" inn, which was converted for purposes of a gaol *circa* 1558. But it is to be borne in mind that the *old* Marshalsea, or Borough Prison, wherein Bishop Bonner died, lay further north on the same side of the street: that is, between Mermaid-court and Newcomen, formerly King, street—the Axe and Bottle-yard of Rocque's map, 1746—and extended eastwards to the Bowling-green whereon booths were erected during the holding of Southwark Fair (see Horwood's map of 1799, and Wilkinson's plan and view, 1812). Having served as a jail for rather more than two hundred years the "White Lion" was replaced by a new Bridewell on the western side of the main street,* and its site was taken, in 1811, for the later Marshalsea, used, until about fifty years since, for smugglers, pirates, and debtors. Before some changes were made in the premises four or five years ago, one could, on passing down Angel-place (formerly Bridewell-alley) turn into a yard on the right hand, and easily identify the four-storied block of eight houses, built back to back, each having seven rooms—the male debtors' side; beyond one saw the old Tap, its first floor being the turnkey's and tapster's rooms, its second floor the female debtors' side, and beyond that the Admiralty Prison and the Chapel, latterly a registered lodging-house. The high wall, since lowered, to the south of the yard, separated it from the churchyard. No. 211, High-street, stands on the site of the front gate, forecourt, and keeper's house of the Marshalsea, and there, by the tenant's courtesy, we recently saw the four posts and cross-beams, with their brackets, of the two prison gates, or "lock," within. In the churchyard—opened as a recreation ground on May 22, 1882—Bonner was buried, 1569; it formed the usual graveyard for inmates of the two Marshalsea and (old) King's Bench prisons. The church, designed by John Price, was built in 1733-6, on the site of that seen in the distance of Hogarth's "Southwark Fair." The widening of Parliament-street has been begun by the demolition of houses at the north end, on the western side. The street was laid out pursuant to an Act 29 Geo. II., c. 38; until 1757 the approach from Whitehall to Westminster was through King-street. The King-street gate, built by Henry VIII., and pulled down in 1723, stood just by the present south-east corner of Downing-street.

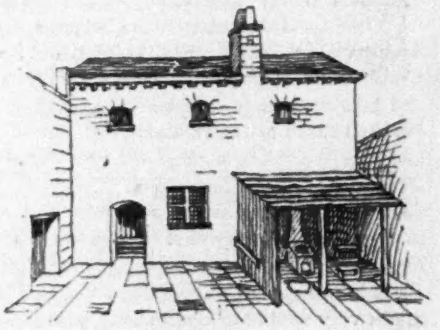

*Fig. 1.*

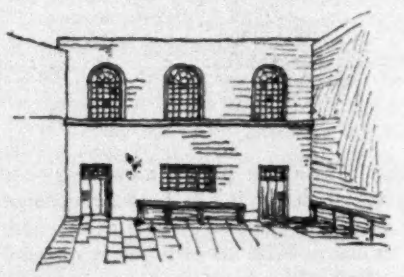

*Fig. 2.*

*Portions of the old Marshalsea Prison.*

Fig. 1.—The former day and night rooms, felons' side; now the kitchen and sleeping-room of the lodging-house. The ceilings are covered with sheet-iron; the floors studded with nails. Some prisoners' names are cut in the stones of the yard.

Fig. 2.—The old chapel, now used as sleeping-rooms for the lodging-house. Some of the prisoners' names are carved on the panels within. The benches are coeval with the prison.

* At Hangman's-acre (now Hill-street), where Friar-street joins Great Suffolk-street.

Exhibition of the T-Square Club.

The catalogue of the Architectural Exhibition of the T-Square Club at the Pennsylvania Academy of Arts is so fully and beautifully illustrated that it seems almost to give us the exhibition on a small scale. As usual in American exhibitions of this kind, there are a good many students' designs, competitions for prizes, &c., which look exactly as if they came from the Académie des Beaux-Arts at Paris; in fact, there is a "Society of Beaux-Arts architects," and we observe in the Report of the Club that a competition is called a "concours" in one place, and in the catalogue before us a design is called a "projet"; so French are the American architects. They had much better try to be Americans. But among the designs for modern buildings by practising architects there is a great deal that is interesting and excellent. Some well-known drawings by English architects have also been sent

over, and are reproduced in the catalogue. There are a great many good effective sketches of ancient work; and altogether the catalogue illustrations give the idea that the exhibition of the T-Square Club must be an exceptionally good one. In the matter of architectural drawing the Americans are beating us, if they have not done so already.

"Société des Peintres Lithographes."

BESIDES the exhibition of lithographic work at Paris which was mentioned in our columns on page 342 *ante*, there is another society, that of the "Peintres Lithographes" or original artists who are designing in lithography, which has opened its first exhibition in the Rue Caumartin, and which differs from the other in admitting only original work and not lithographic copies. It includes some work of the first order. M. Fantin-Latour exhibits a series of illustrations to the works of Wagner and Berlioz (many of these have been seen in London exhibitions). Among other exhibits are a remarkable collection of designs for posters by M. Léandre: and among others of the more remarkable drawings are those by MM. Bourgonnier, Dillon, Millot, Bahut, Van Meyden, and others.

## THE ARCHITECTURAL ASSOCIATION

THE ordinary fortnightly meeting of this Association was held on the 5th inst. in the Meeting-room of the Royal Institute of British Architects, No. 9, Conduit-street, Regent-street, Mr. Hampden W. Pratt, President, occupying the chair.

The minutes of the last meeting having been read and confirmed, the following gentlemen were elected as members:—Messrs. F. G. May, E. O. Payne, W. S. Payne, J. H. Pearson, C. E. Pease, C. M. Quilter, E. R. Taylor, E. P. Archer, A. C. Stair, C. C. Duggan, R. C. Fry, J. Haslam, C. F. Innocent, and E. H. Kent. It was also stated that Mr. N. L. Ashburner had been reinstated.

The Chairman stated that the Conversazione would be held at the Matinée Theatre (formerly St. George's Hall), Langham-place, on the 26th inst. The President's reception will take place at eight o'clock, and at 8.45 a musical play will be given. The play, which has been specially written for the occasion by Mr. F. D. Clapham, with music composed by Mr. Leonard Butler, will be entitled "A Broken Contract; or an Egyptian Enigma."

Mr. S. Flint Clarkson then read the following paper, entitled "A Proposal for Classifying Builders' Work":—

The proposal is that Classes, such as fair (A), good (B), best (C), shall be agreed upon. The Committee, realising that I need not be lengthy, thought part of the evening would be sufficient; I hope that we may see our way to rapid progress. The proposal is made in the interest of employers, architects, and contractors It will probably be about equally serviceable to all, as long as contract amounts are settled by competition tendering. Other systems besides competition may be tried with advantage; but, at present, the greater part of the work is allotted in that method, which seems likely to be kept to also in the immediate future. Drawings, specifications, quantities, competitive estimates, clerks of works, and other superintendence, and 5 per cent. are the recognised machinery,—by which an employer gets exactly what he ought to wish for, and is assured that he is to pay no more than the market price for it. We propose only a minor improvement in the regular machinery. Let us see why it seems desirable.

Gradation in quality is as legitimate in builders' work as it is in anything. People know this very well, though they may grumble when gradation takes too wide a range. Proportion is not simply securing the right relation of function and apparent importance. Thorough proportion requires that materials and workmanship shall be varied judiciously by the architect in different buildings, and in different parts of the same building. Blunders and wild tendering will account for anything, but there will be smiles, and notes of admiration also, for less outrageous disparities—which might often be traced to misapprehension as to the class of work required. Between work of the highest class and fair work without pretension to excellence, there is a wide distance. From work ranking with the best of all time we reach by proper stages the most ordinary work—sound and serviceable, though wanting in fineness of quality and finish; and thence the déclassés may be reached—found in building as in life. Certain contractors lay themselves out for work of a certain kind—selecting workpeople and materials accordingly—and anything out of the usual course meets with less cordial welcome, and is sometimes not competed for with eagerness. The selection of such imperfectly sympathetic contractors accounts for other bad tenders—as also the selection of people who differ a good deal in the class of their business. Classification of work will not help us over all difficulties, but it may be of service in many.

Any decent names of Classes will prove better than any others as soon as they are generally accepted. Naming of Sub-Classes would cause little trouble; every one could do it for himself, or definitions might be agreed upon from time to time, and then used in general practice. There are good precedents. Ships sort themselves into classes. "Best best best" is in general use. There are degrees of merit in timber and other trades; it is, in fact, difficult to find a trade which does not supply precedents. "The Act to facilitate the granting of certain leases" (8 and 9 Vic., c. 124) has supplied for over fifty years specimens of concise forms having much meaning. Fair, good, best; Classes 1, 2, 3; ordinary, average, superior; and many other words or forms may suggest themselves, doubtless all with show of reason. There must naturally be two extremes and a mean. The worst work with which an architect could be connected would be at one end, first-rate monumental work at the other, and something better than the one and less excellent than the other between. Let us try:—

*Class A.*—Nothing special anywhere; the most current things in all trades.

*Class B.*—Something below the best; special design, adaptation, &c., in the more important parts of the building; good execution, but a keen regard for cost.

*Class C.*—Excellence in materials and execution; the most finished work of the time; for the best public and private buildings.

Objectors will hint that some contractors might try to supply the least costly work of its Class—in fact, the worst work which the architect would pass—instead of what was intended; but the same sort of contractors do that sort of thing now. It will also be suggested that general specifications are not effective, and that Classification might be interpreted by some architects as an encouragement to undue brevity. "The building is to belong to Class B, and is to be completed in all respects accordingly," is the pithiness which is feared; but the passion for detail will keep most architects on the old lines. Old friends, in new clothing, always come to the front to hinder changes; but this brave self-devotion does not entitle them to special mention.

Hurried, slovenly, and generally inferior specifications (and drawings) should not increase in number, as they are serious evils; but it does not follow that anything which might prevent an inferior specification from failing hopelessly would necessarily be an evil. Hopeless failure results when everything proves adverse; but purses pleasantly full, well-occupied lives, and a healthy appetite for compromise, enable many meagre specifications to keep their virtue. Sometimes they are even (in retrospect) looked upon as blessings in disguise. Some employers appreciate low tenders; the architect who has obtained so much for so little is spoken of as skilful and economical; and the contractor, if treated with judicious liberality, does not object to posing as a benefactor who works more cheaply than other people. Contractors are sometimes informed, in suitable language, that they are not to add a large sum per page of specification to their tenders, because the specification seems unusally big, and so much per drawing also, because some of the detail drawings, which will form part of the contract, have been prepared in good time instead of later on. Shrewd employers have the same thing in view, when they ask whether a specification of 150 pages is really necessary, and hint that explanations about moderation in quality to the builders submitting tenders should be very precise. The mention of a recognised class of work at the beginning of a specification need not lead to the omission of a word from the most thorough specification. The proposed prefatory words would, however, throw a strong light upon every detail.

There are pieces of work which fall to every one of us, where time is so all important, that delay, of a few days, in starting the work, may lead to serious reflections on the energy and resource of the architect. These are, happily, exceptional cases, though apparently on the increase, and should not influence ordinary practice conducted under better conditions. But an architect thus pressed for time, after describing all special items and throwing the rest of the work into one of the proposed Classes, might feel solid ground under his feet, in carrying through a contract.

The Classification would frequently be, in effect, a record of the result of negotiations; such a record as ought to be in writing, in view of the uncertain future—for general understandings are frequently misunderstood, memory fails, or ill-will and bad blood distort it, and much else; or parties die and give no sign. A specification may call, in conventional terms, for the best materials and labour of their respective kinds, and describe the respective kinds, and still leave a good deal to the discretion of the architect. People who can get on with very imperfect specifications manage to struggle through with more perfect ones. Difficulties arise when a contractor tries to supply a good deal less, and an employer, at the same time, asks for a good deal more than the discreet architect considers that the contract provides. The employer, who anxiously suggested explanations to the contractors as to a moderate sum and a good deal of work for it, may find that events before the contract was signed, after a busy interval, become more and more shadowy. He then prayed, as a favour, for mediocre work; now he and his friends read the specification with much care, and interpret conventional phrases literally and liberally—and there is perhaps assistance for them from legal minds. If the contract made it quite clear that work of Class A was intended, such an employer might be disposed to leave things alone. An architect selected because he has a reputation for thoroughness and work of high quality; an appeal by the employer for the mildest treatment such a reputation will permit; resolute bargaining and a low contract sum; and in the sequel a tender solicitude for the keeping up of the architect's reputation—might thus, in the future, be treated by a playwright as one of the dramatic situations possible only in the elder days.

It happens too frequently that Fate rewards a fair-minded architect with more than adequate retribution for other people's faults. The same post may bring him remonstrances both from contractors and employers. One contractor cannot find in the one-eighth scale drawings several mouldings for which he has received full sizes; another finds too many check grooves and tongues in the joinery, and unlooked-for stoolings in stonework; another suggests vigorous reductions (or extras), and something nearer a freeman's liberty as to materials. Employers, on the other hand, say their say. Pleasant-minded architects have remarked that, if there is an ambient atmosphere of imperfect satisfaction while the works are in progress, there will not be very much cause for grumbling at the end. But would not things go more smoothly in many cases if everybody had the help of the proposed Classification?

It should be added that no minor change will prove a panacea for all building ills. A trial of Classification is only a modest little practical proposal. It could be easily introduced, and should be generally accepted in a short time.

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The Chairman, in opening the discussion, said at first sight the matter might appear to be a simple one, but the more they looked into it the more difficult it would be found to realise it in a practical way. If they took a building which had been erected, it would be quite possible as architects or surveyors to classify it under Class A, B, or C—good, better, or best—as the case might be. But how could they, when commencing a building, set a model before them and say that the building was to be erected in the same class? After all, a building was made up of parts and details, and

the different degrees of merit or quality in it were matters of specification. In his opinion it was more a question of difference of material or quality of material which made a classification, than quality and difference in workmanship; and therefore builders with reputations would tell the architect, when called upon to build in class A, for instance, that they only built in one class, viz., the best. In his opinion that would be a reasonable attitude. A builder might naturally consider it beneath him to build in any but the best class. In looking at the matter from the builder's point of view, and not from the architect's, he felt that the best class of builders would not agree to the proposed classification. Would it not be difficult, supposing the classification were adopted, for any particular building about to be erected to be named under any particular class? He did not see why it should not belong to two or three instead of one. It was just a question of material, and in some part of the building a better kind of material might be used than in another, and a mixed result would be obtained. He thought it was more a question for builders to consider than for architects. As architects, they had been accustomed to specify that all work and materials should be of the best kinds, and they knew perfectly well that that meant nothing unless they saw that the materials and the workmanship were of the kind specified. In his opinion, if they had a good and clear specification and some control over the materials that were to be used, they would be able to get what they stipulated for.

Mr. W. H. Seth-Smith said that there was something very fresh about the proposal, which required time for consideration. But on the face of it he was rather inclined to agree with the Chairman that it would be found difficult to work out, and that it was more a question of labour than of materials. As the result of the present disposition of trades unions, the good workman received the same wages as an indifferent man, and therefore the price of first-class workmanship would have to be paid whether the building was, or was not, classed as first, second, or a third rate job. Two-thirds of the cost of erection were for workmanship and not materials. He felt that the suggestion was one which would be more valuable as between architects and clients than between architects and builders. If they could give their clients who wanted too much accommodation and first-class work for a low figure to understand that they could only have second or third class work for the money, much misunderstanding would be avoided. One mistake that architects had a tendency to make was in putting too much detail in a building which they were required to erect at a small and inadequate sum. His experience was that a better result was obtained in omitting a good deal of detail on such occasions.

Mr. H. J. Leaning said they were much indebted to Mr. Clarkson for bringing before them a subject of such interest, though he felt bound to disagree with the lecturer's conclusions. It was a pity that Mr. Clarkson had not moved a resolution so that some evidence might be obtained as to the feelings of the meeting on the question. Do what he might the architect often felt that with stereotyped specifications such as now predominate he could not get from the builder all that he specified, and the builder, on the other hand, seemed to expect to escape some of his obligations in every contract. When the architect, instead of being master of the works and chief director, became merely a spectator the specification was merely a cipher, but that was no fault of its own. Mr. Clarkson had said that the classification would not take the place of specifications; on the contrary, it would not lead to the omission of a single word. Presumably then it would only indicate how far these words meant what they said. What was the difference between good and bad materials and workmanship? The quality of a building was determined, apart from any questions of plan or design—(1) by the fitness and efficiency of its several parts, such as thicknesses of walls, scantlings of timbers, and the amount of detail put into its finishings, which were all matters determined by the specification, drawings, details, and quantities, and (2) by the quality of the materials used and the style and finish of the workmanship. There seemed to be a confusion of ideas in Mr. Clarkson's definitions, for he referred to matters of design, adaptation, &c., which would come in the first category. In his opinion the classification could only apply to the character of the materials and certainly not to the drawings and details. How was it that a speculating builder could produce a given house for so much less than the architect? Largely, he believed, by economies effected in the first category—thinner inner walls, zinc instead of lead, no roof boarding or felt, &c. All these were quite distinct from any saving in the quality of materials or workmanship. The latter were not capable of quite such clear and easy definition, but even here there was very little that defied intelligent description. The architect was able, without much trouble, to bind the builder hand and foot. He could specify the makers of facing bricks, &c., the quality of the sand, and whence to be obtained, and so on; and his chief difficulty was with regard to his timber. As to that, insistence upon well-known brands and specific market qualities seemed to be the only safe guide. As to labour, architects could not specify so precisely. The only protection, especially just now, was to go to builders who had a command of the labour market and with whom their leading men in each trade had worked for years. It would be seen that the proportion of work in a building which was indefinable was really quite small, and got smaller with every day of our increasing technical education. The classification would be very well if applied to separate articles, but when applied to a collective mass it ceased to have any meaning. Furthermore, it allowed nothing for questions of taste. He knew, for instance, architects who would not have stock bricks, but insisted on malms for so-called stock facing, which often meant a difference of 15s. per thousand. Then as to locality, they would want a classification to apply all over the country, and for various reasons that would be impossible. If the suggestion had been rather for the formation of three or four model specifications, to be circulated among architects purely for themselves, to define what were really suitable materials to use for certain classes of work, he thought that a good purpose would have been served. In conclusion, he thought that by the present system it was quite possible not only to produce work of the very best description, but when necessary to economise without sacrifice either of good taste or good construction, and for evidence of that he would point to the work of many of our architects (well known among builders) who asked for what they wanted and saw that they got it.

Mr. J. Douglass Mathews said that it would be easier to get a classification of materials than of buildings, though that would be a difficult matter unless they were in touch with all the manufacturers' terms and got that which they asked for. Mr. Clarkson's suggestion was a very valuable one, though the matter was much more difficult than the lecturer seemed to think. No doubt builders understood at the present time the different classes of work, but to get the classification acknowledged it would have to be so clearly put that there would be no doubt whatever in the mind of either employer or builder as to which class a building belonged. There was not much difficulty about classifying the best class of building—whether such buildings were described in the way suggested, or whether the usual method were adopted, such as a note on the specification that all the materials and workmanship were to be of the best class procurable. But he did not see how that could be done in Class A, although it might be possible. In Class B, however, there would be still greater difficulty in carrying out the suggestion. Naturally they, as architects, would insist upon having in the foundations as good concrete, brickwork, and mortar in Class B as in Class C. The same remarks applied to timber. But all these matters were really covered by the specifications and drawings. Therefore, he thought that to really classify these materials, a skeleton specification would have to be drawn up which must be acknowledged by architect, builder, and employer, in such a way that it would be an instrument which would be binding. There would not be so much difficulty with the builders as with the architects, for some builders would be very glad to know in which class they were to build; and, no doubt, some of them would build as near as possible to the class below the one specified, and considerable supervision would be necessary to keep a builder in the class specified. The paper had not been as clear to him as he had hoped, but, perhaps, Mr. Clarkson would be able to make a further communication on the subject. Mr. Clarkson was a member of the Practice Committee of the Institute, and, no doubt, if he would take the trouble to bring the matter in a tangible form before that body, the members would be very pleased to fully consider and carry out the suggestions if they were found to be practicable.

Mr. H. Lovegrove, in proposing a vote of thanks to the lecturer, said he would like to reverse the order of the classes, so that they might be more in accordance with the naming of ships. But was it not a fact that builders were very much classified at present? If they were going to carry out a rough job in the suburbs they would not ask the best known builders to tender for it; and, on the other hand, if they wanted perfection in joinery they would not ask X, Y, or Z in the suburbs to carry out the work. Builders were certainly divided in that way. Another difficulty was when, in a finished building, carried out in an inferior class, they found awkward gapings in the mitres of the mouldings, shrinking panels, &c., the builder would be able to point to the specification and show that the building was specified in an inferior class.

Mr. Osborne Smith, in seconding the vote of thanks, said that he must agree with those who had taken part in the discussion rather than with Mr. Clarkson. If they made their specifications and drawings clear, and had the quantities properly taken out, builders would not make a mistake as to the kind of building to be erected. He had considered whether a classification as had been proposed by Mr. Clarkson would be of use in his own practice, but he had come to the conclusion that if he made proper drawings and specifications the builders would understand more readily what he wanted than by any classification. If such classification were made he did not see how it would work.

Mr. Max Clarke said he could not see what object would be served by the proposed classification. In his opinion as good buildings should be erected for the poor man as for the rich. A house should be built to live in, and a poor man should be provided with a dwelling which would preserve his health just as much as the rich man. Therefore, this classification should only apply to ornateness. Under such a classification he was afraid that some builders would supply the least costly materials possible in the class specified. For instance, the other day he visited Peterborough, where he was surprised to see that Fletton bricks are of very much higher quality than those supplied in London. He would like to know how many architects, who had written specifications in the present year, had intimated to the contractor their desire to get the very best class of bricks. This was so of other materials as well, and the contractor often assumed that he was to use the lowest class of material. There were some houses which it would be very difficult to classify at all.

The Chairman said that he quite agreed with Mr. Lovegrove that builders were already classified, and that being so, when a particular class of building was wanted, a particular class of builders was invited to tender for its erection. It was in regard to the quality of the material that the classification could be made. The discussion had made it clear that, however desirable it might be to have classification, it would be difficult to carry it out. However, if the Practice Committee of the Institute could take the matter into consideration, as Mr. Mathews had suggested, some practical result might follow.

The vote of thanks was then put and carried by acclamation.

Mr. Clarkson, in reply, said that many of the remarks made were of value, though they did not come as a revelation to him, as he had given much consideration to the general bearings and details. As had been said, the subject was a difficult one to deal with, though he was surprised that so few of the speakers seemed to consider the classification desirable. As there was another paper to follow, however, he did not propose to make a long reply on that occasion.

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Mr. H. D. Searles-Wood then read the following paper, entitled "Some New Materials for Use in Building":—

The two materials that I propose to deal with to-night are asbestic and petrifite. I do not pretend to have any experience in the use of either, but they having come under my notice, and striking me as of very great import-

ance, I thought that the members of this Association might like to have their attention called to them.

Mr. Harbott, the secretary of the London Agents for Asbestic, is here to answer any question relative to that material, and Mr. G. F. Seddon, the engineer to the Petrifite Company, will explain what the possibilities of petrifite are.

Asbestic comes to this country from Lower Canada, and is a name given to a by-product from the manufacture of asbestos from serpentine. After the fine white fibrous asbestos has been extracted by machinery, this sand is left, and it is the various uses to which this can be put, that I propose to call your attention.

Large quantities of this material have recently been used in the United States and Canada in the form of plaster.

It is claimed for plaster made with ordinary lime and asbestic (the proportion recommended being 3 cwt. of lime to 1 ton of asbestic) that it is absolutely fireproof, and being fibrous and possessing very great elasticity, there is no cracking, chipping, or crumbling away, and nails driven into it enter in the same way as into a pine board, and can be easily withdrawn.

This plaster is also a perfect non-conductor of heat, and rooms plastered with this substance keep an even temperature much longer than rooms plastered with other materials.

It is stated that this plaster, being a perfect non-conductor of sound, has a curious effect on the room or hall where it is used, making them much easier for singing or speaking in.

For the protection of metals, this substance has a great future. An elaborate series of experiments were carried out by General Sooey Smith, when he found that asbestic not only protected the metal against fire, but at the same time preserved it from any corrosion.

The covering properties of the asbestic plaster are about 40 per cent. more than those of ordinary plaster, and it is 40 per cent. lighter to handle; the mixing and application are so much easier that there is a saving of 25 per cent. in actual labour.

The directions for use are given as under:—

For rough coat: Slack about 3 cwt. of lime, and while liquid run it through a sieve into a box large enough to hold one ton of asbestic. Mix thoroughly, adding the requisite amount of water. After the lime and asbestic are thoroughly mixed, the plaster should be allowed to stand at least twenty-four hours before being used. For finishing coat: Mix two parts of lime to one of asbestic finish and gauge with plaster of Paris. No hair or sand is required. The price of the asbestic, per ton of 2,240 lbs., is 3*l.*; asbestic finish, 5*l.* The sole agents for London are Messrs. Witty & Wyatt, of 88, Leadenhall-street, E.C., where numerous samples can be seen.

The foregoing information I have obtained from the trade circular.

The plaster takes about three weeks in setting to get thoroughly hard, and it gradually toughens after that time.

The asbestic is now being made up in slabs about ¼ in. thick; these can be worked as easily as wood, and as non-conductors of heat and cold they can be utilised for walls, ceilings, cornices, mosaics, &c., and can be used out of doors and coloured as required. In hot climates it will resist the attacks of the termite, or white ant. A bungalow constructed with an outer and inner skin of this material and a confined air space between would have a low temperature in the hotest weather. It can be moulded to any shape and fixed in position by nails, screws, or cement. This material is far more suitable for buildings in new countries such as Africa or West Australia than corrugated iron or Hessian (that is, canvas and framing that does duty for walling in many of the new townships in those countries). A friend of mine who has just returned from West Australia particularly complained of the discomfort of the Hessian built hotels. Picture to yourselves an hotel constructed entirely of canvas in which there were five bars, and all of them filled with miners whose panacea for every ill is whiskey. The non-conducting property of asbestic plaster would in this building be of great value.

In America and Canada asbestic roofing is largely used; it forms a light roofing material that is absolutely incombustible, and, being a non-conductor, keeps the building of an even temperature. For hot countries glazed asbestic tiles are being made for roofing purposes.

In the manufacture of paper, asbestic is being largely used. Paper 130 in. in width is being produced in one factory for building purposes. Asbestic has been recently selected by the London County Council as one of the fireproof materials that may be used in the alterations at Olympia.

Talking over the subject of this paper with Mr. Drew, when we were at Furness Abbey, I asked him what new material in his opinion was most wanted. He replied, "An artificial slate." By the kindness of the proprietors of the two materials I am describing to-night, I have made some artificial slates which I think will meet this want. The samples were only made yesterday, and so are not yet fit for experiments, and the surface is smoother than I intended; but I think that they show that a good roof covering can be made in this way. They would be light, non-combustible, and non-conducting. These samples are self-coloured, and are a dark grey, but they could be made to any shade of colour.

Petrifite is a white cement which appears to have the power of binding together almost any material that can be thought of. The principle of the invention was discovered in 1891; but it was not until some years later that a cheap and practical method of making petrifite was worked out and patented, and even now it is not practically on the market, though I am informed that it is hoped it may be by the 15th of this month. During the lapse of time from its discovery a large series of exhaustive and interesting experiments have been made, and some wonderful results obtained.

Messrs. David Kirkaldy & Son have reported on the following experiments:—

*Table of Messrs. Kirkaldy's Tests.*

| —— | Proportion of Petrifite or Portland Cement. | Days Old. | Resistance in Tons per square foot. | Greater strength of Petrifite. |
|---|---|---|---|---|
| CRUSHING STRENGTH. | | | | |
| Portland cement and clean pit sand ... ... ... ... | 25 per cent. | 10 | 47·2 | Eleven times the strength. |
| Petrifite and ordinary sea sand... | " | " | 520·4 | |
| Petrifite and common earth ... | " | " | 180·4 | Nearly four times the strength. |
| Natural Bath stone ... ... | — | — | 117·7 | Nearly twice as strong. |
| Petrifite and ordinary sea sand... | 10 per cent. | 30 | 218·9 | |
| Natural Portland stone ... ... | — | — | 554·8 | Stronger when only thirty days old. |
| Petrifite and ordinary sea sand... | 25 per cent. | 30 | 574·1 | |
| Marble.—Carrara blocks ... | — | — | 772·4 | 8 per cent. stronger. |
| Dust from the same with petrifite | 50 per cent. | 10 | 833·5 | |
| TENSILE STRENGTH. | | | lbs. per square inch. | |
| Portland cement and clean pit sand ... ... ... ... | 25 per cent. | 10 | 156 | Over five times as strong. |
| Petrifite cement and clean pit sand ... ... ... ... | " | " | 838 | |
| Petrifite, sea sand, and powdered chalk ... ... ... ... | " | " | 1203 | Over seven times as strong. |
| POROSITY. | | | Absorption per cent. upon original weight. | |
| Portland cement and clean pit sand ... ... ... ... | 25 per cent. | | 5·42 | Nine times less porous. |
| Petrifite cement and clean sea sand ... ... ... ... | " | | ·60 | |

*All the above were cast without pressure.*

In a further report made by Messrs. Kirkaldy in May, 1897, as to the effect of immersion in water, it was found to reduce the ordinary petrifite 25 per cent. in strength, as against 10 per cent. in natural Portland stone and 20 per cent. natural Bath stone, but samples made with hydraulic petrifite, which is ordinary petrifite mixed with from 5 to 10 per cent. of inexpensive materials, the diminution in strength is slight.

As regards hardness of surface and hardness internally, there is hardly any appreciable difference between 2 to 1 Portland and 6 to 1 or 9 to 1 petrifite.

A backing of 6 to 1 petrifite, faced with 3 parts plaster of Paris to 1 of petrifite, yields a hard and smooth surface very suitable for walls.

The tests made to ascertain the relative adherence of petrifite mortar show that 6 of sand to 1 of petrifite adheres as well to the face of rough bricks as good Portland cement mortar mixed 3 to 1. In the case of bricks with rather smooth surfaces, petrifite mortar gave nearly four times the adhesive strength. Petrifite mortar mixed 3 to 1 with smooth bricks had ten times the adhesive strength of the same proportion of Portland cement mortar. Another feature of petrifite is that it adheres to wood.

Messrs. Kirkaldy summarise their two reports by stating that petrifite has the following valuable properties:—

1. Its combinations have great crushing and tensile strength and adhesive qualities.

2. It will solidify unclean materials, the presence of which, even in small quantities, would be fatal to the setting of Portland and other cements, and bind together into useful blocks many substances which cannot now be utilised.

3. Dirty or unwashed materials can be used, which is not the case with other cements.

4. Its compounds do not sweat or effloresce, thus enabling sea sand to be used.

5. It will adhere perfectly to wood or iron.

6. As ordinarily used it solidifies slowly, so that work need not be hurried; it then dries and sets hard with great rapidity.

7. It is so powerful that a much smaller quantity suffices, considerably reducing the cost of freight and transport.

8. After setting has commenced, it can be still used again, as but little deterioration takes place, unlike other cements, when small quantities have to be mixed for immediate use.

9. It does not become inert after exposure to a damp atmosphere.

10. It may be used when quite freshly made, without fear of failure.

Messrs. Stanger & Blount's report states that petrifite, when mixed with a suitable aggregate, *e.g.*, sand, expands on setting to about the same small extent as Portland cement. This expansion is not likely to be perceptible in ordinary use.

Mr. G. F. Harris, stone and quarry expert, summarises his very interesting report on petrifite sandstone, that the Petrifite Company can deliver a first-class dressed building stone in London at a price under half that of dressed natural building stone, and of a superior quality.

As a plaster, petrifite has been reported on by Mr. Marson. Its advantages over Portland cement are that it can be used with sea sand without risk of efflorescence, and the surface is harder and closer than when Thames sand is used. Thus the labour of screening and washing the sand is saved. Petrifite grips the whole surface, both smooth and rough places, and, being "fatter" than Portland cement, can be laid more easily, and does better. Compared with Keene's cement, it has the advantage of being non-porous, much harder when set, and can be worked much more quickly.

If petrifite compounds are painted whilst wet, the paint sinks into the soft material. It takes no longer to dry than ordinary paint put

on woodwork. In twenty-four hours a room can be finished and ready for occupation.

With colouring matter, petrifite and water is a first-class substitute for ordinary distemper.

In moulding, all difficulty of allowance for contraction is avoided, and for making the moulds for casting repeats, petrifite mixed with plaster of Paris or sand is a perfect material.

Plaster slabs made of petrifite are much stronger than the ordinary slabs, which are going out of use, as they are not strong enough, although of great convenience.

As a cement for iron, an ordinary galvanised iron building can be covered with petrifite plaster, and it will adhere perfectly.

Petrifite has one special quality—viz., that the water which is added does not evaporate but enters into a chemical union with the cement. The hardening process takes a very short time; it may be delayed by cold weather, which has a bad effect on all other cements and lime, but the setting is not stopped. A wall coated with petrifite mortar will not crack if done in hot weather. Petrifite cement may be used in any climate and at any season of the year.

Used as artificial wood, petrifite mixed with sawdust has the following advantages over ordinary wood.

1. It is one quarter the price of hard wood.
2. It does not expand or contract as natural wood does.
3. It does not split, nor crash, nor warp.
4. Uninflammable.
5. Free from the ravages of white ants.

Two tables at the works of the company, about 12 ft. long by 3 ft. broad, made of sawdust are faultless, although they have had rough usuage for about three years.

This artificial wood can be cast into any shape or size, and can be worked with the same tools as ordinary wood. It also has the advantage that it can be made in large masses, uniform in quality and strength throughout. For flooring it can be made in an unbroken sheet. It can be made so as to be easily sawn at any time, or else it can be made as hard as stone, and can be coloured to any shade.

Two artificial stones made of sawdust and petrifite have been tested for four years, one as a step outside the main entrance of the Landsberg Factory, and the other as a flag stone at the entrance gate of a flour mill at Landsberg; both of these stones show little signs of wear although they have had very hard usage.

At the offices of the Petrifite Company, 10, Walbrook, there is a very interesting collection of specimens of a great variety of waste materials, such as road sweepings, ashes, and clinkers from the destructors, made into bricks for the City Commissioners of Sewers by being mixed with 25 per cent. of petrifite; and some really beautiful slabs made of waste paper pulp, and some slabs of polished plaster made of marble dust, even the sawdust and petrifite blocks being capable of taking a polish, the grains of wood being so indurated with the petrifite. The sawdust blocks also are practically incombustible.

But it is not as an artificial stone, marble, or wood that I bring this before you to-night, but as a new material to take up its own ground. And I think that this is the direction in which any discussion might be most usefully turned. Here are two materials of a highly plastic nature, and what is the legitimate treatment for them from an architectural point of view?

Petrifite can be run, moulded, or worked by a tool; either moulded and built in the walling in blocks, or run and modelled *in situ*.

Much remains to be done to develop the proper treatment of cement work. Within its own limits, stucco is as legitimate a building material as stone or brick.

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The Chairman said that when new materials of the kind under their notice, were introduced into the market, the great idea of those concerned seemed to be to imitate something that was much more costly. Twenty or thirty years ago the practice of imitating marbles and beautiful woods would not have been countenanced by architects. He was afraid that we had degenerated a good deal since those times. There must, however, be uses to which these materials could be put, and it was of considerable advantage to be able to use these waste products. The question, however, was how could architects direct manufacturers to properly use the materials.

Mr. C. H. Brodie then briefly proposed a vote of thanks to Mr. Searles-Wood.

Mr. Seth-Smith, in seconding, said it was most important, if they were to make any progress in building, that they should know the latest results of scientific research and experiment. Nothing was so likely to get an architect into difficulties as the use of new and untried materials, and architects needed to have very open, and, at the same time conservative, minds in regard to such materials. As far as they knew the materials they were considering might be usefully employed in interiors, but at present they had no evidence to enable them to say much more.

Mr. E. Howley Sim said that he had noticed that when a new material was put upon the market it was often said to be capable of being used for nearly everything. If such a material was highly recommended for a particular purpose there was more probability of it receiving attention. He would like to ask what was the weak point about "Petrifite?" There was usually some weak point, and information in this direction would be of interest to them, and also the comparative cost.

A member asked if the use of "Petrifite" in a building had an unhygienic effect upon people. If the material could be mixed with paper-mill refuse, &c., could it not be used with sewage sludge? If so, a good means would have been found for dealing with a very difficult problem.

Mr. Douglass Mathews asked what action acids had upon "Petrifite." Some of the specimens shown seemed to indicate that the polish would not last.

Mr. G. F. Seddon, a representative of the manufacturers of "Petrifite," in reply to some of the questions, said that the material would not resist strong acid solutions any more than other cements would, though it would stand weak solutions. He knew of no reason why the material should affect the health, and as to the cost, the price of cement "Petrifite" was 60s. a ton, though the material was not yet on the market. The plaster specimen which had been shown was not simply "Petrifite;" it was what they called "Petrifine," which was supplied at about 50s. a ton. It had been found that the action of frost delayed the setting of the material a considerable time, but it did set, and much sooner than Portland or any other cement. He did not know that the material had any weak point. With regard to the porosity of the cement, coal brickettes (composed of coal dust and 3 per cent. of "Petrifite") were immersed in water for twenty-four hours, and the absorption was 6 per cent.; after forty-eight hours it was 6¼ per cent., and after fourteen days there was no appreciable difference.

The vote of thanks to Mr. Searles-Wood having been agreed to unanimously, and Mr. Searles-Wood having acknowledged it, the Chairman announced that the next meeting would be held on December 3, when Mr. J. Osborne Smith would read a paper on "The Planning of High Schools and Endowed Schools for Girls."

The meeting then terminated.

## MAGAZINES AND REVIEWS.*

THE illustrations of the *Architectural Review* (Boston) consist in the last issued number principally of details, including a fine piece of imitation Roman cornice to the "Society for Savings" building by Messrs. Peabody & Stearns, at Hartford, in which the details are certainly all borrowed, though there is a little modern freedom in the treatment of the *amorini* in the carved frieze. Mr. Russell Sturgis contributes an important article on competitions, with a curious list of the results of several in which he was concerned, and some suggestions for the better regulation of competitions in the future. The article is worth the attention of English architects. We gather from it, among other things, that one per cent. on the estimated cost is considered in the States to be a proper remuneration for competition drawings in a limited competition, and that this proportion of payment has in various cases been made to unsuccessful competitors in limited competitions; a rate of remuneration which we seldom or never hear of in this country. Mr. Sturgis seems to suggest that there should be no competitions except those called "limited"; but how in that case is the unknown genius to come to the front?

The *Art Journal* contains an article on the works of Mr. G. Frampton, among the illustrations of which is the portion of the Mitchell memorial in which the sculptor substituted tree-trunks and branches to play the part of an architectural arcade—a piquant idea, but not altogether satisfactory; nor (*pace* Mr. Miller who writes the article) is the column "a highly conventionalised representation of the tree," or anything of the kind. Among articles dealing with the crafts is one on the Langdale linen industry, and one on the Rookwood pottery in Cincinnati. Also Mr. Edwin Dolby's recollections of an old lithographer are of considerable interest. Mr. Dolby, in old days before the dawn of photo-lithography, made many of the finest and best known lithographic drawings for architectural works. Among other things, he mentions that Haghe and others used to employ assistants as "tinters," whose office was to work up the general masses of shadow ready for the artist to finish upon, and this was a very well-paid industry.

The *Art Annual* of the year is devoted to the career and works of Mr. Orchardson, and an exceptionally interesting collection the illustrations from his various works make, when thus collectively treated. Mr. Orchardson is one of the most intellectual painters we have, though this is not always realised by those who connect intellectual painting only with ideal subjects. His pictures are a kind of criticism of life.

The *Magazine of Art* devotes an article to the works of Mr. Robert Fowler, of Liverpool, who merits the attention as an original and poetic artist, and whose designs appear better in black and white than in his rather peculiar and fanciful scale of colour, which gives one the impression of being a conscious effort at originality. An article on the Harrow Art School is illustrated by sketches and designs by the boys, which show how successful the school has been in developing a faculty of drawing and design among them. Who would have thought a generation ago of public school boys troubling their heads about studies from nature or conventionalised floral designs? An article on Greek landscape and architecture by Mr. A. Higgins is appropriately illustrated by Mr. Fulleylove. A coloured print from Sir E. Poynter's "The Offering" is given as a sample of the effect to be obtained by what is known as the three-colour process, in which only three coloured inks—red, blue, and yellow, are employed to produce all the gradations to be seen in the finished print.

Every artistic journal nowadays must have its articles upon some living artist, with examples of his works, his talk and his criticism; and the *Studio* takes Mr. Frank Brangwyn, and gives among other illustrations two designs for Mural Panels which are new to us. Mr. Frampton's article on Woodcarving is excellent in its tone, its preference of beauty of line to mere high finish, and its correct estimate of the work of Gibbons, but the example of a carved capital and corbel pleases us not; it is far too realistic; his pastoral staff is piquant and original. There is an article, with a good many illustrations, on the work done at the East London School of Art and Craft which is called Essex House; a meritorious institution, but one which certainly loses no opportunity of advertisement.

In the *Nineteenth Century* Prince Kropotkin's article on "Recent Science" (a subject on which he writes from time to time, and very ably, in this magazine) is mainly occupied with the subject of the origin of the variations in the surface of the earth—its modelling, in fact—and recent scientific opinion and investigation in regard to it.

The *Atlantic Monthly* includes an article of some interest on "Peculiarities of American Municipal Government," by Mr. E. L. Godkin, who sets out with stating the essential difference between American municipalities and those of the Old World as consisting in the fact that the Old World municipalities were to a great extent the continuation of a life and privileges historically pertaining to the city itself, whereas the American municipalities are the creations of the State. The article, however, deals with the political rather than with the administrative aspect of municipalities.

The *Revue Générale* completes the paper on "John Ruskin et L'Art Anglais" by M. Arnold Goffin, begun in a former number, and it is curious to read here all the blind adulation of

* The object of these notes is to point out anything in the contents of the current magazines which is of special interest to our readers, with occasional brief criticisms on the views expressed in such articles. When a magazine which has been sent to us is not noticed, it is because that number contains nothing that it is within our province to comment upon.

Ruskin which was prevalent in England some twenty years ago, now beginning over again in France.

The *Antiquary* commences a series of articles on "Spanish Historic Monuments" by Mr. J. L. Powell, commencing with "A Mosque and Synagogues in Toledo." We regret to see that the *Antiquary* still keeps reiterating the same absurd and bigoted remarks about the repair of the gable at Peterborough, remarks which are simply a perversion of the facts.

The *Journal of the Sanitary Institute* for October contains the addresses delivered and papers read at the Sanitary Congress at Leeds in September.

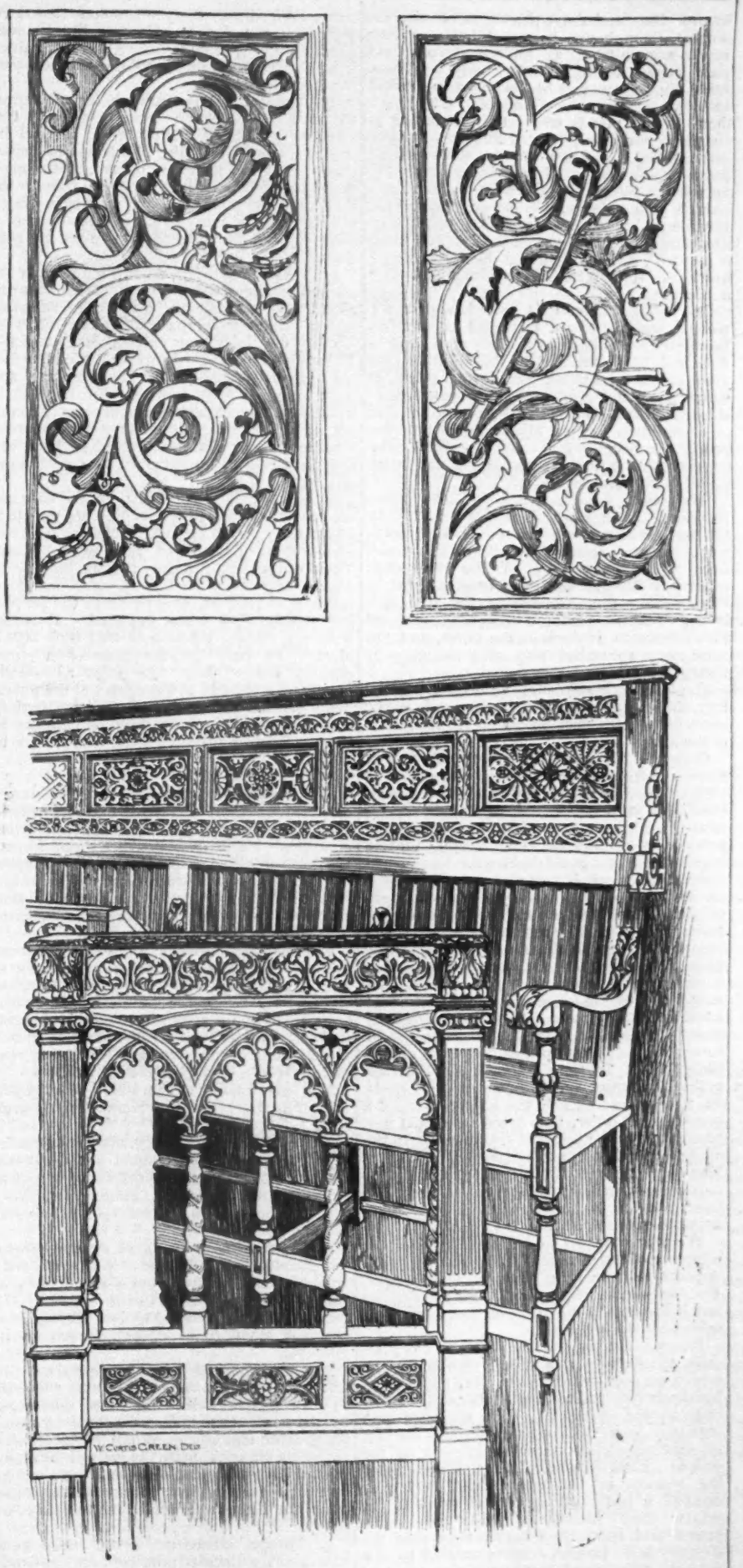
The *Essex Review* seems to have rather exhausted the architectural objects of the county, but is keeping up a series of short articles on the church bells of Essex, with the inscriptions on them, &c.

The *Genealogical Magazine* includes a history of Oswestry Parish Church.

## SCHOOL OF ART WOOD CARVING.

THESE sketches illustrate some of the recent work done at the School of Art Wood Carving, South Kensington. The stalls have been executed for Mr. Geo. Churnside, of Melbourne, by the students in training. The construction was designed by Mr. F. A. Crallan, the details for wood-carving by Mr. W. H. Grimwood. They are not intended for choir stalls as would at first appear, but for a private pew of six seats. At each end of the pew runs a low wall on which the end brackets rest, and to which the open part of the kneeling desk is hinged. The stalls can be viewed up to the 13th, and are worth a visit to those who are interested in modern wood carving; the handling of each piece is precise and definite, showing no hesitation in the method of getting a pleasant result. Constructionally the design is open to criticism—the lower rail connecting the front legs of the seat is certainly very inconvenient for kneeling down; the upper part of the kneeling desk is weak in design: it merely displays excellent wood-carving. The whole is executed in oak.

The two panels are in pine, and are the work of Mr. W. H. Grimwood; they are good examples of a simple flowing line in decoration, and are excellent in execution.




*Sketches at the School of Art Wood Carving, Exhibition-road.*

## PAROCHIAL CHURCHES.*

WRITING in or about 750 A.D., the Abbess Walpurga stated: "It is the custom of the Saxon race that on many of the estates of nobles and of good men they are wont to have not a church but the standard of the holy cross dedicated to our Lord, and reverenced with great honour, lifted up on high, so as to be convenient for the frequency of daily prayer." This statement receives confirmation from Baeda, who tells us that such was the esteem for religion among the Saxons that "If any presbyter chanced to come into a village, the inhabitants flocked together to hear from him the word of life; for the presbyters and clergy went into the villages on no other account than to preach, baptise, visit the sick, and in short to take care of souls. And they were so far from wordly avarice that none of them received lands and possessions for building monasteries (*i.e.*, as we should say glebe-houses) unless they were compelled to do so by the temporal authorities."

About a century, however, before the Conquest there must have been a certain number of private churches or at least of private chaplains ordained for conducting services regularly at particular places, who claimed in consequence to be entitled to receive the people's tithes and offerings. This is manifest from the second of King Edgar's Ecclesiastical Laws in the year 958 A.D., and this was the first step to what afterwards became the parochial system.

The parochial system introduced a new kind of churches and a new kind of service, churches which were private oratories in their foundation, but were allowed some of the rights of public churches, and had a form of service which was neither a solemn service conducted by many clergy, nor yet a private service conducted by a single priest. The parish was the manor or group of manors under its ecclesiastical aspect. The origin of the parochial system is therefore contemporary with the origin of the manorial system, but although it may have existed earlier in France, in this country its beginnings date from the Norman Conquest; the system was not, however, complete before the thirteenth century.

After showing that the Saxons had not the parochial system, the lecturer proceeded: "The Norman conquerors of this country, although rough and ready in manners, were pious and devout in heart, and they altered things greatly to the advantage of the church. The ancient minsters in a few cases they simply left in possession of their lands, but more frequently a Norman churchman was placed at their head as abbot, and the estates of the religious house were conferred upon him to hold by baronial

* A portion of a paper read last week before the Devon and Exeter Architectural Society by the Rev. Oswald J. Reichel.

tenure. Over and above this the more religious among them began to pay tithes on their newly-won estates, as their ancestors had paid before them in Normandy. These tithes they sometimes bestowed on an ancient minster, but quite as frequently they gave them to the priests whom they appointed as chaplains for newly erected churches on their own estates. Gradually the ties were broken down which connected the villages with the ancient minsters. The newly-built village church, with its monasterium or glebe-house, became a centre of religious life, but not of discipline, and the village service ceased to be a private service celebrated by a travelling missionary from the bishop, without becoming a solemn one.

The village church is not intended for solemn worship like a cathedral or minster, therefore the presbytery and apse and a detached altar standing in the chord of the apse are not required. In it the priest is simply the public leader of the people's worship. He takes his place at their head like one of themselves, for, as Micrologus says, the people are necessary to him to make up the two or three without whom there can be no public or corporate worship.

The most suitable place for the altar, therefore, is against the east wall. As solemn services died out in ancient minsters, which appears to have been the case at the beginning of the thirteenth century, a straight wall was erected even in these against the east side of the altar, the bishop's seat was removed in consequence from the east end to a place in the choir, and the presbytery converted into an ambulatory or enlarged to form a Lady Chapel.

The village church being without a presbytery, the seats for the clergy, often one, never more than three, were placed on the south side of the altar.

Owing to the same reason—the absence of solemn worship—the choir or chancel of a village church is usually found of small dimensions, and in most cases incapable of accommodating a choir, notwithstanding the modern practice of placing these; it seems, indeed, impossible that a choir could ever have occupied the chancel, if any attempt was made—as no doubt it would be on great days—to celebrate the service with any degree of solemnity. A certain amount of space would be necessary for the deacon and sub-deacon to pass to and fro to the rood-loft. Had a choir in the chancel been contemplated, we may be sure the chancels would have been constructed much wider than they are usually found. This view is strikingly confirmed by some of the latest pronouncements of the Society of St. Osmund, who consider the west gallery the most suitable place for the choir. In a collegiate church the singers formed a semi-clerical order, who were instructed and brought up in the house of the church. In the village church there was no order of singers. The only other clerk besides the priest was the parish clerk, without whose assistance both the third and fourth Lateran Councils forbid any priest to offer the Eucharist.

We may even go so far as to say that the existence of the nave at all in the village church appears to have been really an afterthought. For the Saxons, as they held their shire-motes and hall-motes in the open, so, too, they themselves prayed in the open.

It seems not improbable that small prayer-cells, those parts of a village church, in fact, which we now call chancels, were the original buildings constructed in a number of places by the ancient ministers, both episcopal and monastic, which took upon themselves the task of sending clergy round to minister to the people. First the clergy had ministered under the shadow of the village-cross, next they erected a small cell to protect the altar, at which they ministered when they came round, and from its entrance they read the Epistle and Gospel, and preached to the people who stood without in the open. The bishop's minsters and the monastic minsters built these prayer cells, and so they and their successors in title continued to maintain them; the practice has still survived even in our own day. In some cases village churches were built where no prayer cell existed before, and this probably explains the rarer cases where, by custom, neither rector nor incumbent, repairs the chancel.

In a climate like ours attending a service in the open must have been, at certain seasons, fairly trying, hence in Norman times the manorial lord and his yeomen constructed for their own use a nave adjoining the chancel, practically a separate structure, and maintained it, until the church rates abolition, at their own separate charges.

The chancel and the nave, however, appear to have always been looked upon as two separate buildings. They were entered by separate doors, and the obligation to repair them fell upon different parties. We may, therefore, conclude that there is no rule for the size and appointments of the nave of a village church save the number of persons to be provided for and the funds available for the purpose.

4. Of old, the ancient minsters, and only the ancient minsters, were supplied with baptistries, for only at these was there an adequate staff of clergy to prepare adults for baptism. To this day only one church in Florence—El Duomo, the domus or house of the church—has a baptistry. All lesser churches are, and were, supplied with fonts for the baptism in infancy of the children of Christian parents, not for adults. In this country it is doubtful whether village churches, except, perhaps, in a few instances, had fonts before the constitutions of Langton in 1223.

As to chapels which exist for the ease and convenience of parishioners who are unable to attend their parish church, or else for the commemoration of the dead, little need be said. Their object being purely private, there is no reason why they should assume one form rather than another, except to serve the purpose for which they were intended. It seems, however, hardly reasonable that they should always be built on the lines of a parish church, unless they are built as district churches, and there is a prospect of the district being erected into a district parish. Perhaps such buildings afford the best opportunity for the architect to strike out some new line of his own.

To sum up briefly:—

There is and always has been in the use of the term "church" applied to buildings a broad distinction between public churches and private churches. Public churches or ancient minsters are those provided with a staff of clergy capable of handing down traditions and exercising public discipline. Private churches are praying places for the living, or places for commemorating the dead.

Intermediate between public churches and private churches are the village churches, the majority of which were originally private chapels, served by itinerant clergy, but were constituted in a certain sense public churches, and endowed with tithes and lands as such by the Norman conquerors between the eleventh and thirteenth centuries in this country.

The intermediate character of a village church is, therefore, represented in its architecture.

1. Instead of a presbytery, apse, and detached altar, the altar is fixed against the north wall, and seats for one or at most three clergy are placed on the south side. This construction of a village church has reacted on the constructions of the cathedrals.

2. There being no body of clerical singers, the chancel is small, and the singers, not a semi-clerical body here, but a mixed body, are placed in some other part of the church. The west gallery, according to the Society of St. Osmund, seems to have been chosen for this purpose.

3. The shadow of the Cross was the earliest oratory among the Saxons. It was succeeded by the prayer cell of modest dimensions, usually constructed and maintained by one of the greater churches. When the prayer cell became a village church, the body of the church was added by the people for their own use, and by the people it has ever since been maintained, until the Church Rates Abolition Act was passed.

4. Village churches, being only public churches for certain purposes, are required to have stone fonts for the baptism of children. Baptistries for the baptism of adults belong to collegiate churches, otherwise called baptismal churches.

5. In constructing chapels it is desirable to consider their ultimate destination and to construct accordingly.

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CLERK OF WORKS, INGHAM INFIRMARY EXTENSION, SOUTH SHIELDS.—Mr. William Bygate, of Newcastle-on-Tyne, has been appointed clerk of works in connexion with the extension works at the Ingham Infirmary, South Shields.

## THE OWEN ARTIFICIAL STONE.

ON Tuesday, November 2, the mode of manufacturing this artificial stone was explained to members of the Press at the works, Worplesdon, near Woking. The essential components of the material are quartzose, sand, and hydraulic lime, and these are united so as to form a solid stone by a peculiar and interesting process, which differs somewhat from the method adopted by Mr. Owen when we first noticed a material bearing the same name in the columns of the *Builder*, and when the production of the stone was in its experimental stage. As now placed on the market, Owen stone is prepared, briefly, as follows: Quartzose sand dug in the vicinity of the works is first dried by being heated; it is then thoroughly mixed dry with hydraulic lime in the proportion of about 12 per cent. of the latter to 88 per cent. of the former. This mixture, still in a dry condition, is packed into very strong moulds of any desired shape, the filled moulds being subsequently built up in a steel frame or box. The latter is conveyed by tramway to an immense steel cylinder, inside of which it is placed, the cylinder now being closed and the door strongly bolted up. Water near the boiling point is then admitted until the cylinder is full and an indicated pressure of from 60 lb. to 70 lb. maintained. The water is kept in a highly heated condition by steam coils running along the length of the cylinder inside, and this, we were informed, is a very essential part of the process.

We may pause for a moment to see what is taking place inside the cylinder. On the admission of the boiling water the hydraulic lime in the moulds commences to slake, and the pressure maintained assists in forcing the water into the sand and lime mixture so as to bring about complete slaking throughout the mass. The mixture being confined in strong moulds it follows that the expansion of the material consequent on slaking is not allowed free play, so that immense pressure is set up within the material itself, which tends to render it much more compact than might otherwise be the case. It is regarded as important that as little air as possible shall be admitted into the cylinder during the slaking; that is why the water is admitted just below the boiling point, and the temperature kept up by steam coils instead of injecting live steam direct into the water.

On the lime being thoroughly slaked, under the conditions named, the pressure and temperature are gradually relaxed and the material is allowed to cool slowly. The cylinder or convertor is subsequently opened, when the mixture is found to be converted into solid stone. The latter is in a wet condition, and becomes harder in the course of twenty-four hours. The whole operation, from the packing of the cylinder to the withdrawl of the moulds, occupies about three days.

And now, in regard to the stone itself. Many experiments have been made on it. A chemical analysis gave:—

| | |
|---|---|
| Insoluble siliceous matter ... ... | 73·27 |
| Combined silica ($Si O_2$) ... ... ... | 4·78 |
| Alumina and Ferric oxide ($Al_2 O$ and $Fe_2 O_3$) ... ... ... ... ... | 2·21 |
| Lime (Ca O) ... ... ... ... | 12·16 |
| Magnesia (Mg O) ... ... ... ... | ·45 |
| Carbonic anhydride ($C O_2$) ... ... | 2·13 |
| Combined water and loss ... ... | 5·00 |
| | 100·00 |

Test blocks of the stone were exposed for sixty-six hours to a moist atmosphere containing sulphur dioxide, it being thought that such a test would show what effect the deleterious air of large towns might have upon the stone; result, no appreciable amount of corrosion. Two samples were immersed in water and frozen and thawed alternately—six times each sample; result, no indications of disintegration. Samples were also heated to redness and plunged into cold water, and the result was satisfactory. And another series of tests of somewhat similar character produced the same results.

The samples viewed by us showed that the material is very fine grained and homogeneous; the stone takes a sharp arris. Its normal tint is light grey, though other colours may be obtained when desired. From a careful micro-analysis we have made, and from the general character of the material, we are of opinion that this is as good a quality of artificial sandstone as any in the market.

## THE SURVEYORS' INSTITUTION:

### PRESIDENT'S ADDRESS.

THE first ordinary general meeting of this Institution for session 1897-8 was held in the temporary premises of the Institution, Savoy-street, Victoria Embankment, on Monday, when the President, Mr. Christopher Oakley, delivered an opening address.

In the course of his remarks the President said that he had lately read with much interest the opening addresses of his predecessors in the chair, especially that of their first President, and he might say founder, Mr. John Clutton. Of the twenty surveyors who, at a meeting held at the Westminster Palace Hotel on March 23, 1868, were by resolution provisionally constituted the Association or Institution (and of which number his father, John Oakley, was one) only two now survive, *i.e.*, Mr. Robert Collier Driver and Mr. William Sturge of Bristol. He advised the younger members of the Institution to take an opportunity of reading Mr. Clutton's first address, and the speech of Mr. John Horatio Lloyd, which followed it. They contained much valuable and wise advice, and they especially pointed out that the success of the Institution depended chiefly on the conduct, influence, and continued effort and co-operation of the individual members, which was as true now as it was then. There was very little legislation in the past session affecting their profession. The Extraordinary Tithe Act, 1897, settled two doubts which had arisen under the Extraordinary Tithe Redemption Act, 1886, and enacted that any rent-charge certified by the Land Commissioners or the Board of Agriculture should be a charge on the whole farm or parcel of land described in their certificate. The President subsequently referred to the question of agricultural depression, and dealt at some length with the final report of the last Royal Commission on Agriculture, dated June 27, and recently issued. In considering the effect of the depression on the sale and price of land, he quoted some figures to show that a very large increase had taken place of acreage sold in 1895-6 compared with 1894, the total for 1895 being more than three times that for 1894, and the total for 1896 being more than double that for 1895. The price per acre in 1895 was about 20 per cent. below that for 1894, and, on the other hand, the price per acre in 1896 was more than 50 per cent. above that for 1895. This large increase must be partly due to some sales of land not strictly agricultural being included in the return, as the value of land had not increased by one-half. The following table gives the sales of ground rents registered in 1875, 1885, 1894, 1895, and 1896, and showed that though the amount sold had very largely increased, the price realised had increased from 26½ to 33½ years' purchase.

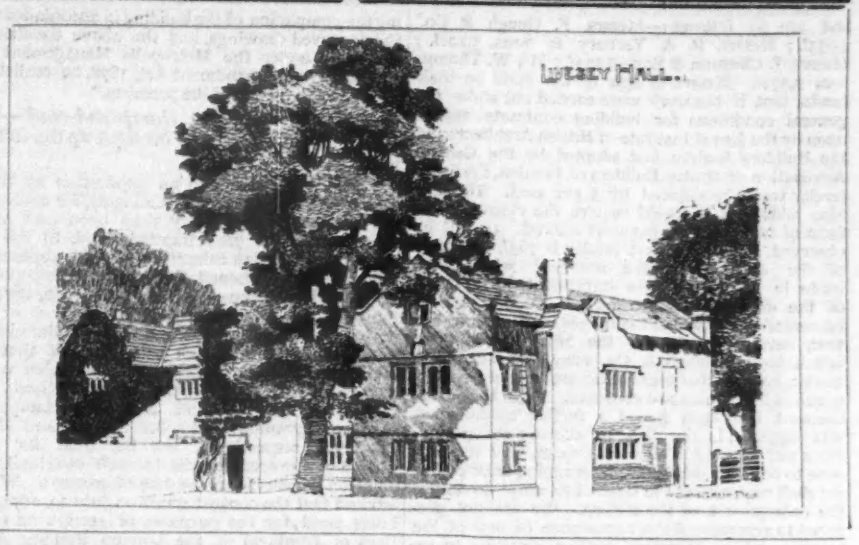
| | | Sold for. | Years' Purchase. |
|---|---|---|---|
| 1875 | £9,498 19 2 | £251,686 | 26½ |
| 1885 | 12,298 9 6 | 342,478 | 27¾ |
| 1894 | 13,518 4 6 | 376,700 | 28 |
| 1895 | 18,149 0 0 | 551,378 | 30½ |
| 1896 | 24,826 0 0 | 832,584 | 33½ |

The total amount of all sales registered at the Estate Exchange in 1896 for London and the country, both auction and private contract, was 10,554,263*l*. For the first nine months of this year the total was about 6 per cent. larger than for the same period in 1896.

In reference to the new buildings for the Institution, the President said that, in the Council's Report in May last it was confidently predicted that the roofing in would be completed before the winter, but owing to unforeseen difficulties as regards foundations a good deal of time was lost which it would not be easy to overtake. Rapid progress was now being made, and there seemed to be some reason for hoping that a portion of the building would be available early next summer. In regard to the new Employment Registry which had just been established by the Council, it was hoped that those of the younger members who were seeking employment or desired to improve their position would in course of time derive considerable advantage from this new means of bringing them in touch with employers, and that employers would also find advantage in knowing where to look for qualified assistants. The Council had taken another very important step in deciding to hold one ordinary general meeting in each session in the provinces, and they had selected Manchester, which was an important examination centre, for the first experiment in this direction. Other parts of England would, in turn, be visited, and it was hoped that the results might prove advantageous in every way to the best interests of the Institution.

A vote of thanks was unanimously accorded to the President for his address.

The proceedings then terminated.




## SANITARY INSPECTORS' ASSOCIATION.

A GENERAL meeting of this Association was held at Carpenters' Hall on Saturday last to receive the inaugural address of the new Chairman, Mr. T. G. Dee, for the election of foreign honorary members, and to consider the applications of two ladies holding appointments as sanitary inspectors to become members of the Association. These applications were supported by Mr. Shawcross (Cheshire branch), Mr. W. W. West (Walthamstow), Mr. H. Thomas (Bermondsey), and other members, but after full discussion they were rejected by 49 votes to 39. Mr. H. Alexander (Shoreditch), Mr. W. H. Grigg, and Mr. Watson (St. James's Vestry), who voted with the majority, pointed out that in the early days of the Association and before it was formed, there was much dissatisfaction on account of the appointment as inspectors of men ignorant of building construction and of other essential technical matters. The Association had laboured in conjunction with the Sanitary Institute to set up a higher standard and to raise the status of sanitary inspectors. Could they expect a lady to possess the kind of knowledge which was the most important qualification for this office? Even if she had the knowledge necessary to enable her to order structural alterations to be carried out, could a lady properly supervise the work ordered to be done? It was also pointed out that competency as a sanitary inspector, did not, by itself, give even an appointed inspector an absolute title to become a member of the Association. Subsequently eight male candidates were elected, and Sir Hugh Gilzean Reid, Monsieur de Bruyn (Belgian Minister of Public Works), with other government and communal officials, including the Burgomasters of Brussels, Ghent, Bruges, and Ostend, were elected honorary members.

The proceedings concluded with the inaugural address of Mr. T. G. Dee, who reviewed the work done by the Association in the past, and then proceeded to consider the means which would enable them to advance towards the realisation of such of their aims as they had not hitherto been able to accomplish. Unfortunately many of their earliest aims still remained unrealised, but the progress made justified the hope of ultimate fulfilment. Among the later aims was their endeavour to obtain a measure of superannuation, in furtherance of which the Council had drafted a bill which they would attempt to get introduced into Parliament next session, notwithstanding the discouraging fate of the "Municipal Officers and the Local Authorities' Officers Bills" during the last session. After dealing with this matter at considerable length, the address concluded with an appeal to the members to always remember that they were banded together to attempt to obtain for their fellow countrymen that greatest of all blessings, health. Of what use could be the efforts of our architects and engineers in providing luxurious homes and methods of travel if health were denied to the community? The usual vote of thanks was accorded to the Chairman.

## LIVESEY HALL.

THIS small sketch was one of those made to accompany the account of the Architectural Association excursion in Lancashire earlier in the year, but was accidently omitted on that occasion. The quiet-looking old house, in combination with the trees, makes a pleasant little picture of old English domestic architecture.

## THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of this Council was held on Tuesday in the County Hall, Spring-gardens, Dr. Collins, Chairman, presiding.

*Loans.*—On the recommendation of the Finance Committee, it was agreed to lend the Vestry of Rotherhithe 7,200*l*. towards the cost of erecting a town hall, &c.; the Wandsworth District Board 3,000*l*. for the formation of a new street; the Hackney Guardians 14,470*l*. for the enlargement of the infirmary and the purchase of premises for the enlargement of the workhouse and for other work; the Guardians of Mile End Old Town 5,500*l*. to defray the cost of electric light at Bancroft-road; and the St. Pancras Guardians 6,000*l*. towards the reconstruction of the workhouse.

*Tramway Junctions and Extensions.*—The Highways Committee recommended, and it was agreed (*a*) that the Council do approve the estimate of 8,500*l*. submitted by the Finance Committee; and that the Council do, under the provisions of the agreement dated May 27, 1897, between the Council and the North Metropolitan and London Street Tramways Companies and confirmed by the North Metropolitan Tramways Act, 1897, and also under the provisions of that Act, direct the North Metropolitan Tramways Company to construct the undermentioned tramways:—(1) junction between Parkhurst-road and Seven Sisters'-road; (2) junction between Camden-road and Holloway-road; (3) junction between Pentonville-road and Goswell and City roads; (4) two furlongs two chains of double and one furlong of single line in Upper Clapton-road; (*b*) that the solicitor do prepare the necessary notice to give effect to the above decision; that the seal of the Council be affixed to such notice when ready; and that the notice be served upon the company.

*Contracts v. Direct Labour.*—The Fire Brigade Committee reported as follows:—

"We reported on July 27 last that we contemplated recommending the Council to carry out without the intervention of a contractor the work of altering and enlarging two fire-engine stations, one of which was that at Hampstead, and the Council authorised us, in the event of the manager of the Works department not being satisfied with the architect's estimate, to invite tenders for the work by public advertisement. The architect's estimate of 4,170*l*. was referred to the manager of the Works department under the standing order of July 20, 1897, but the manager having reported to us that he was of opinion that the estimate was not sufficient for the work described in the specification and quantities, tenders were invited. Those received were referred to us by the Council on October 26,

and are as follows:—Messrs. F. Gough & Co.' 4,955*l.*; Messrs. R. A. Yerbury & Sons, 5,128*l.*; Messrs. J. Chessum & Sons, 5,153*l.*; Mr. W. Thompson, 5,372*l.* Messrs. Gough & Co. state on their tender that if the work were carried out under the general conditions for building contracts agreed upon by the Royal Institute of British Architects and the Builders' Society, and adopted by the Central Association of Master Builders of London, the firm's tender would be reduced by 5 per cent. The firm also adds that it would require the clause in the form of contract as to payment altered. It will be observed that the lowest tender is 785*l.* in excess of the estimate of the architect which was made in April last. He states that about 100*l.* of the difference is attributable to the rise in labourers' wages which took place in June last, but that, having looked over the bills of quantities which Messrs. Gough & Co. submitted with their tender, he finds that some items are priced at rates which in his opinion are excessive. After the advertisement had been issued a further modification was suggested in the plan for altering the engine-room and forming a recreation-room, and we propose to consider this before determining what course we shall recommend the Council to adopt to insure the enlargement of the station. We are not prepared to recommend the acceptance of any of the tenders, and we therefore confine ourselves to recommending that none of the tenders for the enlargement and alteration of the Hampstead fire-engine station be entertained."

Mr. M'Kinnon Wood moved an amendment to refer the matter back for further consideration, to include the causes which had led to the tenders exceeding the estimate by so large a sum. He said that in the past considerable complaint had been made against the Works Committee of quarrelling with the estimates. The present case went far to justify the action of the committee. They said the estimate in the present case was too low, and that had been confirmed by the contractors.

Mr. Ward seconded, and in the course of his remarks he said that prices had gone up a good deal, and that the Council's estimating officers had not, apparently, allowed for that.

Mr. E. White said that his complaint against the Works Committee had been that it had accepted work at too low a cost. The reason that contractors were shy of tendering for the Council's work was that the conditions imposed by the Council, from which the Works Committee were free, were very onerous. This fact also probably accounted for the tenders in this case being so large.

Mr. J. Burns, M.P., said that the reason the Works Committee took work at low prices was that they were urged to do so by Mr. White and his friends. The so-called onerous conditions which had been referred to applied to the Works Committee just as much as to the contractors. The Works Department had offered to do the work under discussion for 4,800*l.*

The amendment was agreed to.

*Painting of Aqueduct, Middle-Level Sewer.*—Mr. White drew attention to a paragraph in the report of the Main Drainage Committee, in which the Council was asked to sanction an additional expenditure of 343*l.* for the repainting of the middle level sewer aqueduct over the Metropolitan Railway at Farringdon-road. He said that the work was carried out by the Works Department under a schedule of prices, the value amounting to 375*l.*; whilst the actual cost of the work had been 718*l.* If this work had been given to a contractor this excess would never have occurred; and the ratepayers would not now be saddled with this loss. He moved as an amendment, that the excess expenditure should not be sanctioned until the Finance Sub-Committee on Works had reported on the details of the expenditure.

Mr. Fletcher seconded the amendment, which was agreed to.

*Coronet Theatre.*—The report of the Theatres and Music Halls Committee contained the following paragraph, the recommendations being agreed to:—

"We have further considered eight drawings dated 16th October, 1897, which have been submitted on behalf of the Coronet Theatre, Limited, for a new theatre to be erected at Notting-hill-gate. The site complies with the Council's regulations as it abuts on Uxbridge-street, Johnson-street and High-street, Notting-hill-gate. The theatre will have seating accommodation for 1,143 persons, and the Council's regulations are shown to be complied with throughout. We therefore recommend—(*a*) That the eight drawings, dated October 16, 1897, of the proposed Coronet Theatre be approved on condition that the works be commenced within six months, and be completed in accordance with the Council's regulations and the provisions of the London Building Act, 1894. (*b*) That upon our reporting the completion of the building in accordance with the approved drawings, and the above condition, a certificate under the Metropolis Management and Buildings Acts Amendment Act, 1878, be sealed and issued to the owner of the premises."

*Lines of frontage in Hampstead-road.*—The Building Act Committee brought up the following report:—

"We have considered an application by Mr. R. Parry, on behalf of Mr. T. Sandilands, for consent to the erection of a one-story shop upon part of the forecourt of No. 78, Hampstead-road, to the line shown upon a plan submitted with the application. It has been ascertained that the late Metropolitan Board of Works gave consent on July 10, 1874., to the erection of one-story shops in front of the houses Nos. 62 to 106 (even numbers), Hampstead-road; but no condition was attached that the erection of the shops should be completed within any specified time. Similar applications with regard to No. 72 and No. 90, Hampstead-road, were granted on October 27, 1891, and March 12, 1895, respectively, but the time for completion of the erection was in each case limited to eighteen months from the date of consent. We are advised that the consent given on July 10, 1874, still holds good for the purposes of section 22 (as to lines of frontage) of the London Building Act of 1894, as, by section 216 it is provided that all consents given under Acts repealed by that Act shall be of the same validity as if they had been given under the Act. Shops have, under the consent given in 1874, been erected in front of several of the adjacent houses, and there appears to have been no necessity for the application now under consideration. We recommend—That the Council do make no order with reference to the application of Mr. R. Parry, on behalf of Mr. T. Sandilands, for consent to the erection of a one-story shop upon part of the forecourt of No. 78, Hampstead-road, to the line shown upon the plan submitted with the application."

Mr. Roberts moved, and Mr. Taylor seconded, that the report be referred back; but after some discussion the amendment was defeated, and the Committee's recommendation was agreed to.

*The Works Department.*—Lord Hardwicke moved, and Mr. Whitmore, M.P., seconded:—"That the Finance Committee be requested to furnish to the Council, before its second meeting in the month of December next, the estimated and actual cost of all works completed up to September 30 last as reported to the Executive Committees, together with a return of works refused by the Works Department for which tenders were afterwards received from contractors in continuation of the return presented on May 11 of this year."

The resolution was agreed to, with an addition to the effect that returns should also be presented of the lowest tenders for works not offered to the Works Department, together with the architects' estimates.

*The Thames Embankment.*—Mr. Goulding, M.P., moved, and Mr. Hayter seconded, "That it is desirable that the embankment of the Thames should be continued from the Victoria Tower garden to Lambeth-bridge, and that it be referred to the Improvements Committee to report generally upon the subject, such report to also deal with the question of the widening of Millbank-street, and the utilisation of any surplus land which might remain after the carrying out of the improvement."

This was agreed to, and the Council adjourned.

## *ARCHITECTURAL SOCIETIES.*

ARCHITECTURAL ASSOCIATION: DISCUSSION SECTION.—The second meeting of the Discussion Section of the Architectural Association was held on the 3rd inst., when a paper was read by Mr. H. V. Crawfurth Smith on the "Interior arrangement of Churches." He treated the subject principally from a historical standpoint, tracing the development of the planning and furnishing of churches from the Jewish synagogue to the Hall of Worship in the Catacombs, the Basilica of the Romans and the English medæval church, which he illustrated by diagrams. He minutely described the furniture of an English church of the sixteenth and seventeenth centuries, and concluded with the following suggestions as worthy of note in designing modern churches:—"The altar should be raised and visible from all parts; sedilia, piscina, and credence constructed in the walls of the fabric so as not to project; a maximum width given to the ritual choir, with the seats low; the chancel screen rich, but not so as to obstruct the view of the altar; the choir raised three steps and sloping from east to west; the nave sloped slightly from west to east; the organ placed in a west gallery or tribune in the choir; the baptistry, as far as possible, a separate compartment; the reredos, if any, well raised above the altar shelf, with a plain surface beneath, as a background to the cross and candlesticks." Following the discussion which ensued, Mr. Fellowes Prynne, the special Visitor, laid stress on the necessity of every one who attempted to design a church being thoroughly imbued with the spirit of the religion which his church was to enshrine, and knowing the symbolic meaning and value of all the several parts. He instanced Salisbury as having, in a symbolic sense, the most beautiful plan he knew. He also sketched on the blackboard other plans which were based on traditional forms, but which were quite suitable for modern churches with large congregations. He advised the members to closely study the old work with a view to finding out the exact symbolic meaning which each part had; only as they did that would their work have any lasting worth.—The next meeting of the Section will take place on the 17th inst., when Mr. J. Hunt will read a paper on "Ecclesiastical Vestments."

GLASGOW ARCHITECTURAL ASSOCIATION.—The usual monthly meeting of this Association was held in the Rooms, 187, Pitt-street, on the 2nd inst., when Mr. James Salmon read a paper entitled "Design in Construction." The lecturer divided his subject into two parts—the æsthetical and the practical. In the former he satirised in a racy fashion the common practice of present-day architectural design, where features of old work were selected and strung together, either inflated or shrunk down as the case required. The same principle was acted upon in construction, the stock forms of the text-books being reproduced without any consideration of their applicability or attempt at fulfilling the same requirements by independent thought. This state of things Mr. Salmon attributed to the recognised system of stuffing students with dull rule of thumb details instead of endeavouring to direct their minds to grasp the general principles and think independently. This was demonstrated by showing in drawings and on the black board modes other than those generally in use for carrying out a few of the commonest pieces of construction.

EDINBURGH ARCHITECTURAL SOCIETY.—A meeting of this Society was held on the 4th inst., Mr. J. A. Williamson, President, in the chair. Mr. A. N. Paterson, Glasgow, delivered a lecture, entitled "Evolution of the House," which was largely illustrated by diagrams. Mr. Paterson first treated of the earliest developments of domestic dwellings, and then described, in historical order, the houses of the Greeks and Romans, the Saxon hall, and Norman castle, the grange and the monastery, the early town house, and the mansions of Elizabethan and Jacobean times. He traced the special Scottish developments from the fifteenth to the seventeenth centuries, and gave a short description of the Palladian type of house, and the house of the times of Queen Anne and the Georges.

DUNDEE INSTITUTE OF ARCHITECTURE.—A conversazione in connexion with Dundee Institute of Architecture, Science, and Art, was held recently in the University College Buildings, Dundee. The proceedings were opened at seven o'clock, when Mr. Leslie Ower, the President of the Institute, took the chair, and delivered an introductory address. After referring to the report for the past year, and several other matters of interest to the members, he addressed his remarks to the students. Opportunities and facilities for the study of their profession were available now to every one in a far greater degree than ever had been the case in their country. Other nations—France in particular—had encouraged the study of art and architecture for generations before we thought the subject worthy of notice; and just as the parochial schools of Scotland, instituted in an age when education was at a very low ebb in all countries, raised the Scot above the average of his fellows, and made his foremost position a proverb, so had the art education of France raised her standard above that of other nations. But they were fast making up for lost time, and it behoved their students to take every advantage of the opportunities put in their way. But let not the student think, on the other hand, that all of architecture, and all necessary for the practice of his art, was to be learned in schools, aye, or even in the office. The world was the architect's schoolmaster, for he had many to serve, many wants to supply, many crude ideas to reduce to workable shape, many aspirations to sympathise with and strive to give effect to

He had much to learn, for the public expected much from him. Indeed, his experience was that there was almost nothing an architect would not need to know about. He had to be an artist and a thorough business man, two qualities which, like old age and want, were an ill-matched pair. He had to have a thorough knowledge of all the trades, and to be skilled in construction and in the properties and strength of the various materials with which he had to deal. Sculpture and painting he must be familiar with, so that he might appeal to them as his good fairies for the final touches to grace his finest works. He had to be sympathetic and trustworthy, a gentleman in his feelings and address, judicious as well as firm in many responsible positions. But though they had chosen a profession which entailed hard and life-long study, it was one which had its compensations. They were engaged in an honourable profession, which, worthily pursued, brought pleasure if not profit to its devotee. Especially would he say revel in the pleasurable parts of their profession in their student days, while they had time and opportunity. Enjoy their sketching tours and visits to old buildings, and to new ones also, for from them much was to be learned. Cultivate the love of the beautiful and seek it in all they saw. On the members he would urge the desirability—nay, the necessity—of their taking a decided and loyal stand together on many points. Petty jealousies ought not to be allowed to keep the profession from showing a united front when unreasonable demands were made or unfair conditions laid down either as regarded competitions, fees, or any other question affecting the profession as a whole or any individual member of the Institute. In those days of excessive competition combination was absolutely necessary, as they could see in all trades and professions, and the only way of making their profession take the position it was entitled to was to be loyal to their common professional interests and to each other. Proceeding, the President remarked that they had only to look at articles of everyday use to see that there had been a great advance in public taste in recent years, and the tendency was still to rise to greater excellence. In this advance in public taste and the bringing of beauty and refinement into the life and soul of the people, he thought there was great ground for satisfaction. Art had a great and ennobling influence, andl ed men's minds to the contemplation of the source of all that was beautiful and true, and those who encouraged it in any way, whether in the common articles of everyday life, in painting, in sculpture, or in building, might rest assured that they were at least helping forward in some degree the building of that spiritual temple "whose walls shall be salvation and whose gates praise."—Professor Kuenen then presented a series of experiments in electricity. A concert followed. In the mechanical laboratory a number of drawings were shown by Mr. T. D. Dunn.

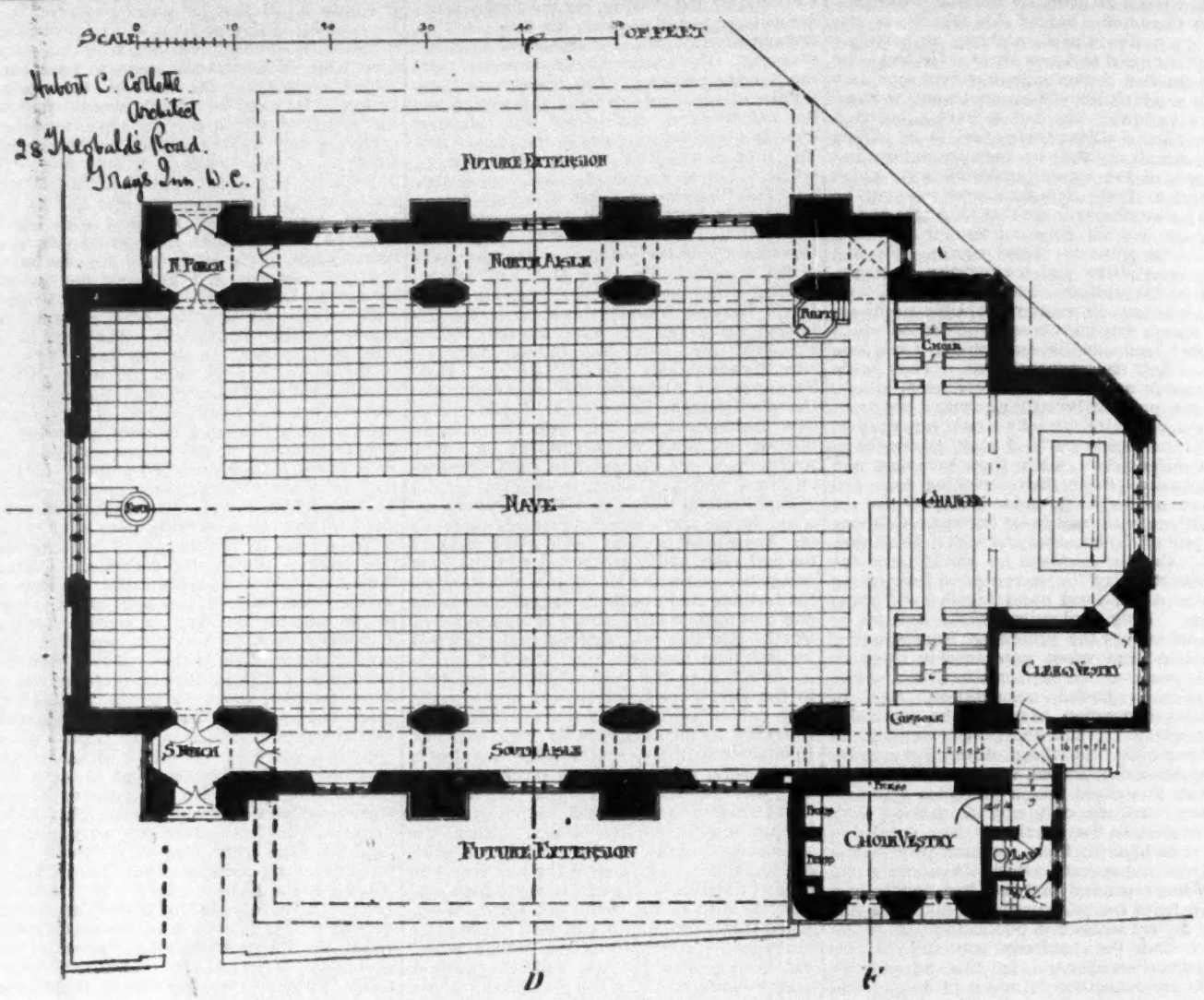
SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.—The monthly meeting of this Society was held at the School of Art on the 9th inst., when there was an unusually large attendance. The President (Mr. R. W. Fowler) was in the chair. The following new members were elected as Associates :—Arthur Appleby (Student), Frank Barker (Student), Henry W. Beale, John H. Chorlton, Sydney L. Chipling (Student), Joseph W. E. Clayton (Student), Herbert Ogden, and George E. Turner (Student) ; and as Students :—Wm. C. Antcliffe, Charles F. Bond, Herbert S. Hague, Thomas Jowitt. Mr. J. A. Gotch, of Kettering, then delivered a lecture on "Eighteenth Century Architecture," illustrated by numerous photographs of buildings, with plans and details, and limelight lantern slides. The lecturer said the view of architecture taken in the eighteenth century was very narrow, being little more than a consideration of the Five Orders. Neither Evelyn nor Addison had the slightest sympathy with Gothic work, and they might be taken to represent the cultured feeling of the age. The Renaissance had now developed to such an extent as to produce little more than copyism of Italian buildings without suitable adaptation to English wants. Architectural design was amateurish and artificial, and its professors were far behind the great masters, Inigo Jones and Wren, in ability. The large houses, of which many were built for great nobles, were devised for display rather than comfort. The State apartments were large and magnificent, and the exteriors were stately and striking, but the family apartments were tucked away as best they could be, without regard to the first principles of house planning. The smaller houses, however, were much more pleasing. The interiors of these smaller houses were generally well treated, and the woodwork of the period still furnished abundant hints to designers of the present day. The next meeting will be on December 14, when Mr. F. R. Farrow, London, will lecture on "The Warming of Public Buildings."

GLASGOW INSTITUTE OF ARCHITECTS.—The newly-elected council of this Institute held their first meeting on the 3rd inst. in the chambers of the Secretary, Mr. C. J. MacLean, 115, St. Vincent-street, under the chairmanship of Mr. David Barclay, Vice-President, when the following office-bearers were elected, viz. :—President, Mr. John Jas. Burnet, A.R.S.A. ; Vice-President, Mr. David Barclay ; Hon. Treasurer, Mr. Alexander Petrie ; Auditor, Mr. Campbell Douglas; Secretary, Mr. C. J. MacLean. The committees for the year were reappointed, including the Committee on Public Architecture and Competitions, the Committee on Prizes, and the Committee on a Curriculum of Architectural Education. The treasurer's accounts for the year were submitted and approved of. Some reference was made to the work of the past year, and it was stated that the joint occupation of the rooms at 187, Pitt-street by the Institute and the Architectural Association had continued to be of benefit to both societies. Special attention was directed to the fact that no less than nineteen new standard works on architecture had been added by purchase to the joint library, which was now a valuable one, and was at all times available for reference to the members of both societies. In addition to these, several gifts of valuable architectural books had been received. Reference was also made to the success of the Metal Work Exhibition which had been held during the past session. Reference was made to the satisfactory results of the educational work done by the Institute during the past year, and to the exhibition of prize drawings of the Royal Institute held in the rooms last April. It was stated that a conference had now taken place between the committee of the council which had been invited to meet with the Glasgow Corporation regarding the designs for a proposed public hall at Springburn, and that the suggestions of the Institute's representatives had been fully adopted by them.

## *ARCHÆOLOGICAL SOCIETIES.*

ROYAL ARCHÆOLOGICAL INSTITUTE. — A general meeting of this Institute was held on the 3rd inst., Judge Baylis, Q.C., in the chair. Mr. F. G. Hilton Price, exhibited seven burgesses' caps, or flat caps of the sixteenth century, found in Finsbury.—Mr. J. Park Harrison, of Christ Church, Oxford, read a paper on Carfax Tower. He said that the results of recent research showed that two rude arches and a doorway high up in the north wall inside the ringers' chamber are, without doubt, of early Saxon date. This, it is to be hoped, when known will lead to their preservation intact, on account of the interest they possess in connexion with the history of the city. The Oxford Council and the eminent architect and antiquary employed by them would, it cannot be doubted, have taken measures to do so had it been known that the remains were of earlier date than Canute. Antony Wood, in his "City of Oxford," says that the earliest mention he could find of St. Martin's Church was a charter, by which Canute gave a church dedicated to St. Martin to Abingdon Abbey in 1035, adding that this was some time after he became possessed of it, and also that it was believed in his time to have been built by Eadward the Elder. Mr. Fletcher, too, the last vicar previous to the union of the parish of St. Martin and the adjoining parish of All Saints, and the consequent demolition of Carfax Church to widen the highway, points out in his history of the former parish that Canute's charter "was not the foundation of a church," and that it was not known when St. Martin's Church was built. History, then, merely contributing the bare fact that a church dedicated to St. Martin was given to Abingdon Abbey by Canute, it rests with archæology to ascertain whether any distinctive architecture inside the tower is of Saxon type ; and this can be shown to be so. The evidence would require photographs to illustrate it. It may be stated, however, that the remains exhibit peculiar structural features common to Roman and Saxon architecture, which Mr. Micklethwaite states to have continued in use to the end of the Saxon period. It may be styled a wall impost, the object of which was to support framed centering for turning arches. The earliest examples of this structural feature are to be found at the east end of Oxford Cathedral, and are believed to date from the first half of the eighth century. They are in a wall which Ethelred II. appears to have religiously preserved when, as we learn from his charter of 1002, he restored and enlarged the church founded by Didon and his daughter, St. Frideswide. There are also two other examples in Oxford, Canute's famous city. They may be of ninth century date. In all four cases the span of the arches is more than the width of the doorway below. The exterior of Carfax Tower was shown, if it were stripped of later work, namely, Early English, Decorated, and modern, to have been of true Saxon proportions.—Mr. F. G. Hilton Price contributed a paper on the remains of Carmelite buildings upon the site of Ye Marygold at Temple Bar. It was in 1878 and 1879 that extensive excavations were made at Temple Bar for the purpose of building the new bank of Messrs. Child & Co. During these excavations a square cellar was found, which had the appearance of a crypt of an ancient building, a portion having a pointed roof, which was supported by several large stone pillars. Three feet below the floor of this cellar was found a layer of encaustic tiles, having a green and yellow glaze, and in another part a large quantity of human bones, arranged in five regular rows, lying N.E. and S.W. A copper cauldron was also discovered, and pronounced to be of the time of King John. No documentary history was known to exist by which these early foundations could be identified with any early building, until this year, when Mr. W. F. Noble came across some old documents in the Record Office relating to the history of the site of Ye Marygold. A Recovery Roll for Easter Term in the seventh year of James I. describes the tenement called Ye Marygold as once "parcel of the possessions of the late dissolved Priory of Carmelite Ffryers in the suburbs of the City of London," founded in 1241. From this and other documents Mr. Noble was able to trace the continued ownership of Ye Marygold from 1241 to the present day, a period of 656 years. From the evidence thus brought forward Mr. Price considered it proven that the Carmelite Priory stood on the site of No. 1, Fleet-street.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—The first meeting of this Association for session 1897-8 was held at 32, Sackville-street, Piccadilly, on the 3rd inst., Mr. Thomas Blashill, Hon. Treasurer, in the chair. The Rev. J. Cave Browne, M.A., exhibited an elegantly-shaped vase of terra-cotta of mediæval date, found in the neighbourhood of Maidstone. Mr. J. Chalkley Gould submitted several good examples of James the Second base coinage, 6d., 1s., 2s. 6d., and 5s. respectively, known as "Irish Gun Money," and read some notes descriptive of them, partly derived from Gill's "Manual of English, Scotch, and Irish Coins." Mr. Gould also exhibited some examples of James's British pewter coins, which circulated also in Ireland, having a plug of copper or mixed metal in the centre of each. Mr. C. H. Compton, V.P., read a paper on Rhuddlan, a town or village in Flintshire, where are the ruins of a castle, and formerly were a hospital, a priory, and a preceptory of Knights Templars. The earliest record of the place occurs in A.D. 795, when a battle was fought between the Saxons and Welsh, in which Caradoc, King of North Wales, Meredyth, King of Dyvid, and Offa, King of Mercia, were slain. Very little is known of the hospital. It most probably merged into the priory, which lasted till the dissolution, when it was granted to Henry ap Harry 32 Henry VIII. The castle is said to have been built by Llewelyn ap Siltoyllt in A.D. 1015, and, after frequently changing hands between the English and Welsh, it was held by King Edward I., when he conquered the Welsh on the death of Llewelyn in 1282, and it was here that the terms of the Welsh capitulation, known as the Statute of Rhuddlan, was signed on the Sunday in mid-Lent in 1284. The Chairman made some observations descriptive of the formation of the castle, and Mr. Worsfold, Mr. Patrick, and others took part in the discussion.




*Design for Church at Exeter. Plan.*

## Illustrations.

### MONUMENT TO MAUPASSANT, PARIS.

THIS very clever and original monument to the late eminent French novelist was two or three weeks ago placed in the small park known as the Parc Monceau at Paris.

The sculptor is M. Verlet, who, being evidently desirous to put in an appearance in the last Salon, sent the work there in an incomplete state, without the portrait bust which was to crown the stele. Various illustrated journals in this country, we presume in equal haste to put in an appearance, published illustrations of the monument in this state, destitute of the portion which was to form the central and principal feature of the whole. We naturally did not care to illustrate an important work in this form, and waited till a photograph of it could be taken complete, and we believe this is the first illustration of it as completed which has been published in this country.

The idea of the monument, with the figure of the young woman who has been plunged into a reverie suggested by the novel she has been reading, is a new and very effective one, and the figure is certainly very expressive in pose. It is to be feared, perhaps, that her contemplations may not be of a very elevating kind, for though Maupassant cannot exactly be called an immoral writer, since he was an artist, and wrote only for literary effect, his novels deal often with very immoral personages and actions. However, he was a consummate artist in literature, and has been appropriately commemorated by a thoroughly artistic monument.

### MONUMENT TO JEAN LECLAIRE, PARIS.

THE name of Léclaire will be remembered by all who are interested in problems of capital and labour, as the man who first worked out and brought into action on a large scale the principle of co-operation of the employés of a firm in the profits. He began his own life as a simple artisan, and became afterwards the head of a large house-painting and glazing firm. He was the founder also of several societies for the benefit of the working classes.

The sculptural portion of the monument is by M. Dalou, than whom no one understands better how to give sculpturesque treatment and dignity of character to a group which must be to some extent realistic. The simple and rather touching motive of the two figures explains itself. The pedestal was designed by M. Formigé, the eminent architect.

The monument was erected about a year ago, in the new Square des Épinettes.

### DESIGN FOR CHURCH AT EXETER.

THIS church was designed by Mr. C. A. Nicholson (Messrs. Nicholson & Corlette) to provide seats for 600 in the nave, which is 44 ft. wide from centre to centre of the arcade piers. These are, more strictly, portions of walling having arches between them, so that the weight of the superstructure should be concentrated on a broad foundation rather than on small points. This seemed advisable from the nature of the ground on which the church was to be built. North and south porches communicate directly with the nave and aisles, with a double screen of doors. The font is at the west end, and it was suggested that a screen should be placed across between the north and south entrances, immediately at the back of the last row of seats in the nave proper. By this means a narthex was formed, in which seats are provided, some of which would be available for late arrivals, who could wait there till the conclusion of certain parts of the service, and so avoid interruption.

A wide open space is obtained in front of the sanctuary, providing room for the easy and quiet movement of communicants, who would come up by the centre and return by the sides into the aisles. The choir has been so placed that it shall be no obstruction, and also arranged with a wall on two sides to throw the voices out into the body of the church, which is 108 ft. long east to west. The organ is in the tower on the south side of the choir. The steps from the vestries into the church became necessary, as the heating-chamber, which is below the choir-vestry, had to be above ground. It was estimated that the building would cost 6,000*l*.

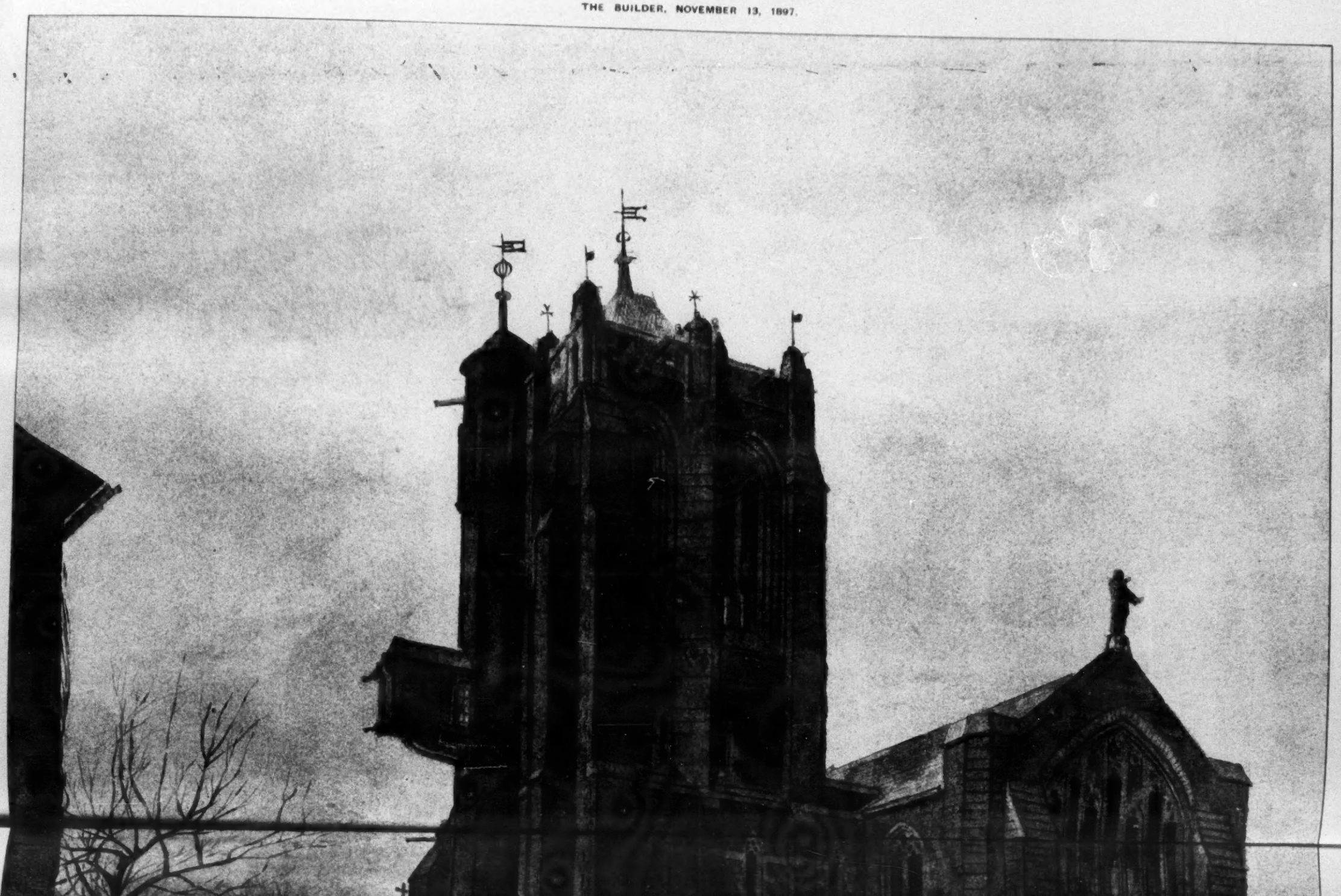
The drawing was exhibited at the last Royal Academy under the name of Mr. C. A. Nicholson, though it will be observed that the plan is described as by Mr. H. C. Corlette. We can merely notice the discrepancy, and give the design under the name appended to it in the Academy catalogue.

### "MAIDENHATCH," PANGBOURNE, BERKS.

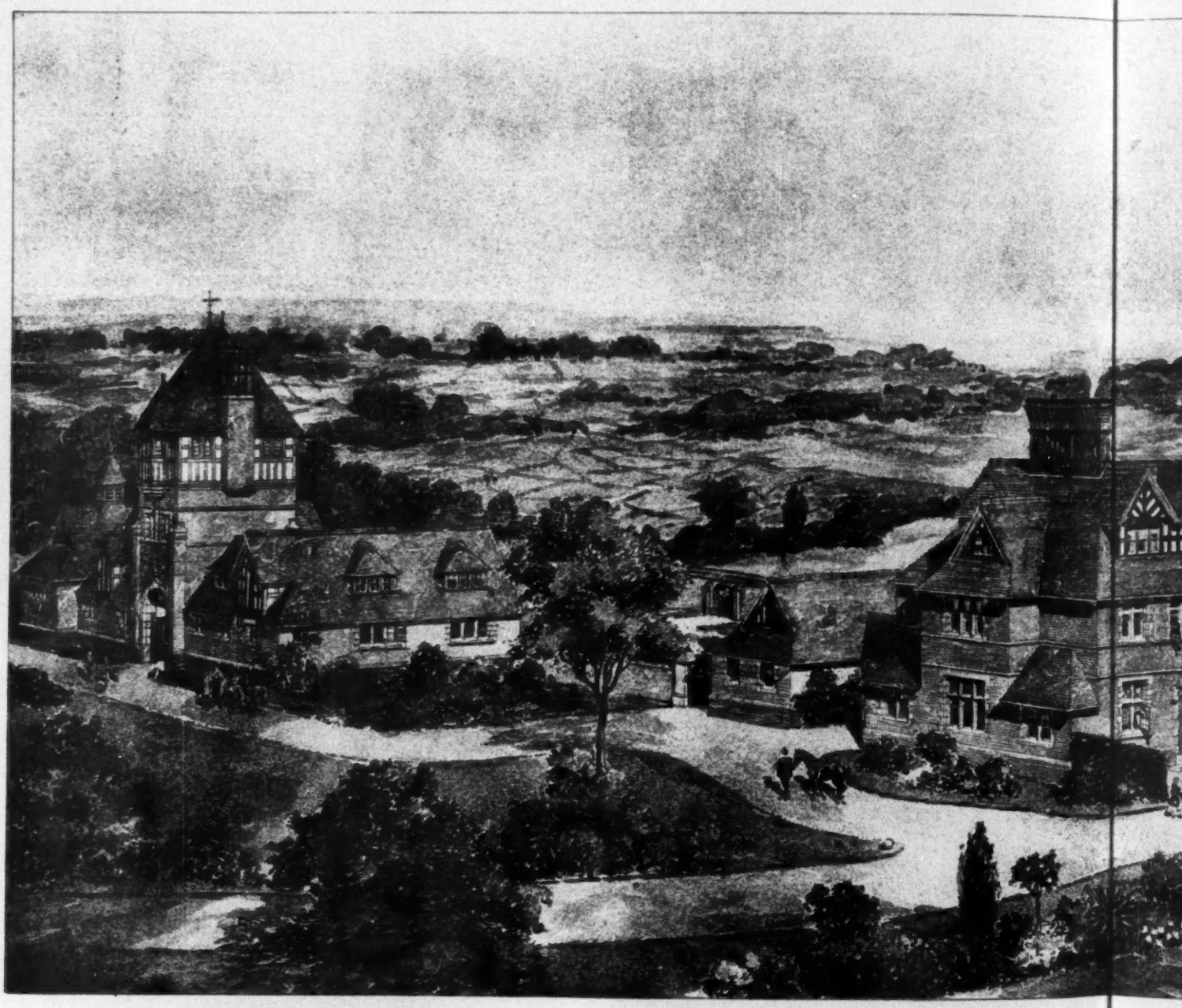
THIS house is situated upon rising ground, commanding a very fine stretch of country, with views over Bradfield College and the plains of Aldershot. The site was formerly part of the Bere Court Estate, which in the twelfth century and for some time onwards belonged to the Abbey of Reading. The old farmhouse still remains, and forms an interesting feature in the landscape.

The house and stabling are placed on the slope of a hill, and are thus protected on the north and east sides by the woods which crown it. The ground plan will speak for itself, and the view of the house, &c., which is taken from a water-colour drawing exhibited this year in the Royal Academy, will give an idea of the general character of the buildings.

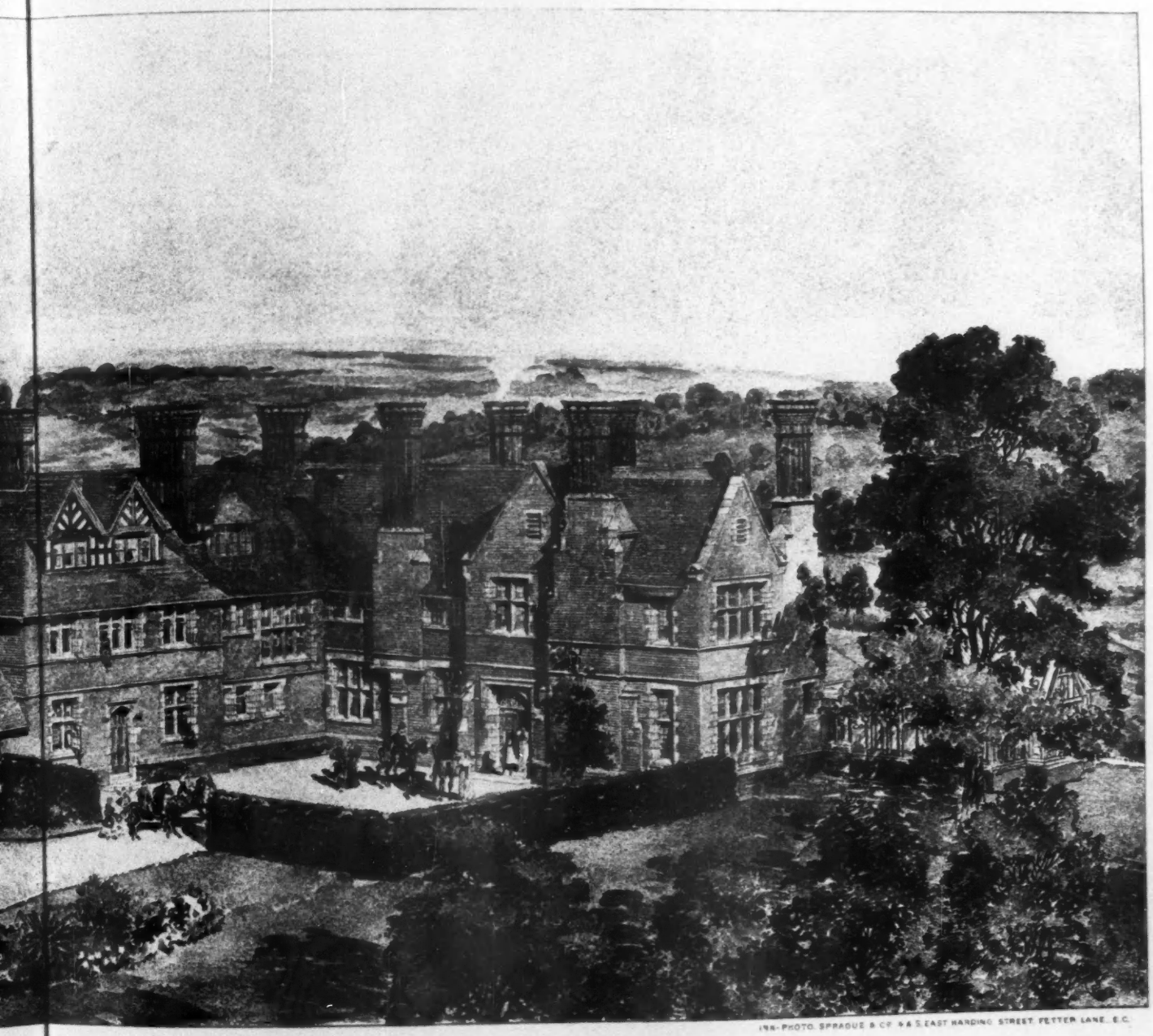
It may, however, be as well to add that, as Captain Thornton, the owner, wished to have an unobtrusive building, both as regards design and colour, ornament has been but sparingly used, and all tones are quiet. This effect has been largely produced by the use of brown tiles and Bedfordshire bricks of a reddish grey hue. The hall, staircase, &c., are finished with oak in ceilings, walls, and floor.



COMPETITION DESIGN FOR CHURCH AT EXETER.—By Mr. C. A. Nicholson.



HOUSE AND STABLING AT "MAIDENHATCH," PANGBOURN



198-PHOTO. SPRAGUE & CO. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

H," PANGBOURNE.—MR. W. RAVENSCROFT, F.S.A., ARCHITECT.

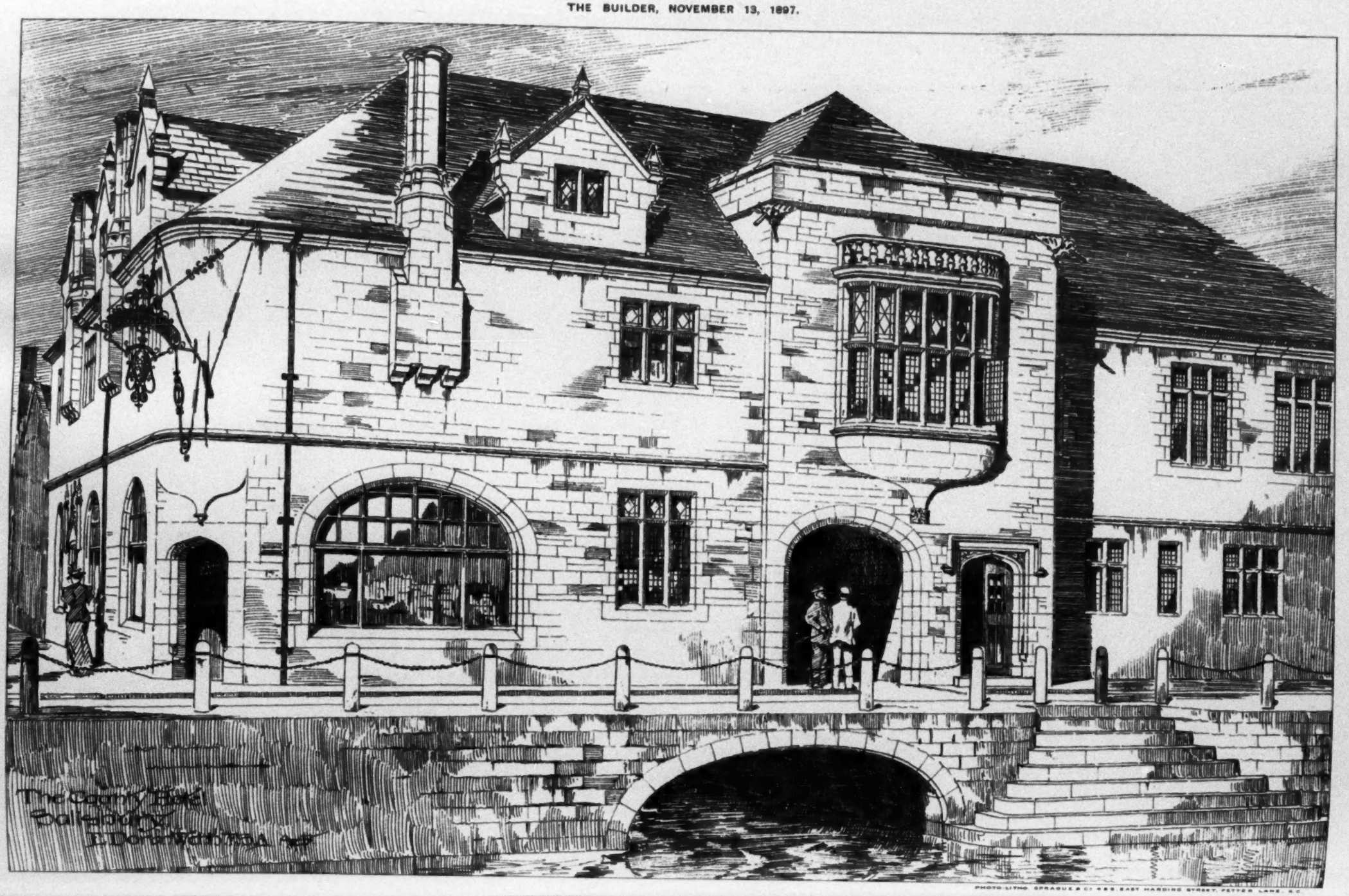


PHOTO-LITHO SPRAGUE & Co 455 EAST HARDING STREET, FETTER LANE, E.C.

MONUMENT TO MAUPASSANT, IN THE PARC MONCEAU, PARIS.

M. VERLET, SCULPTOR.

MONUMENT TO LÉCLAIRE, IN THE SQUARE DES ÉPINETTES, PARIS.

M. DALOU, SCULPTOR: M. FORMIGÉ, ARCHITECT.

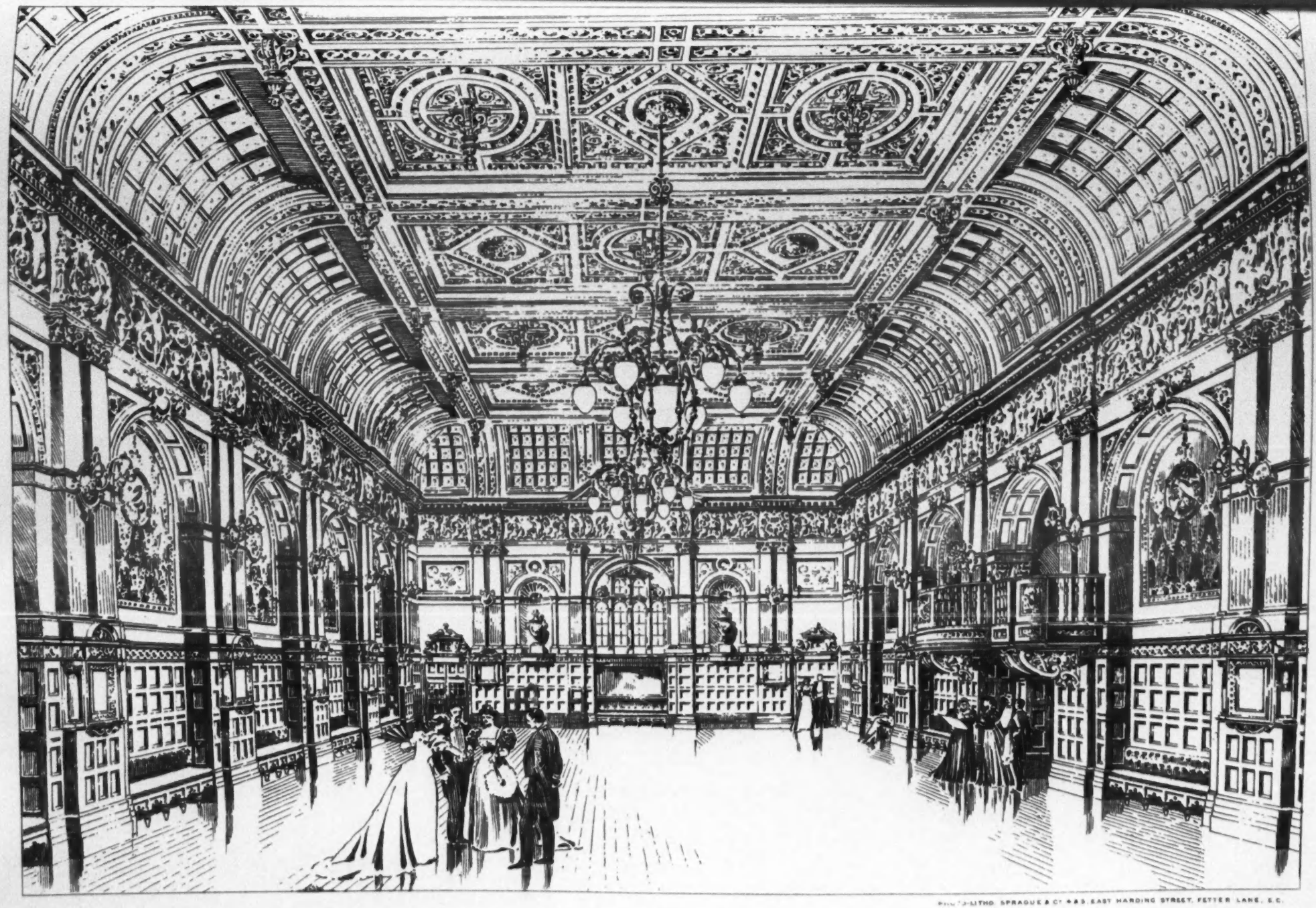
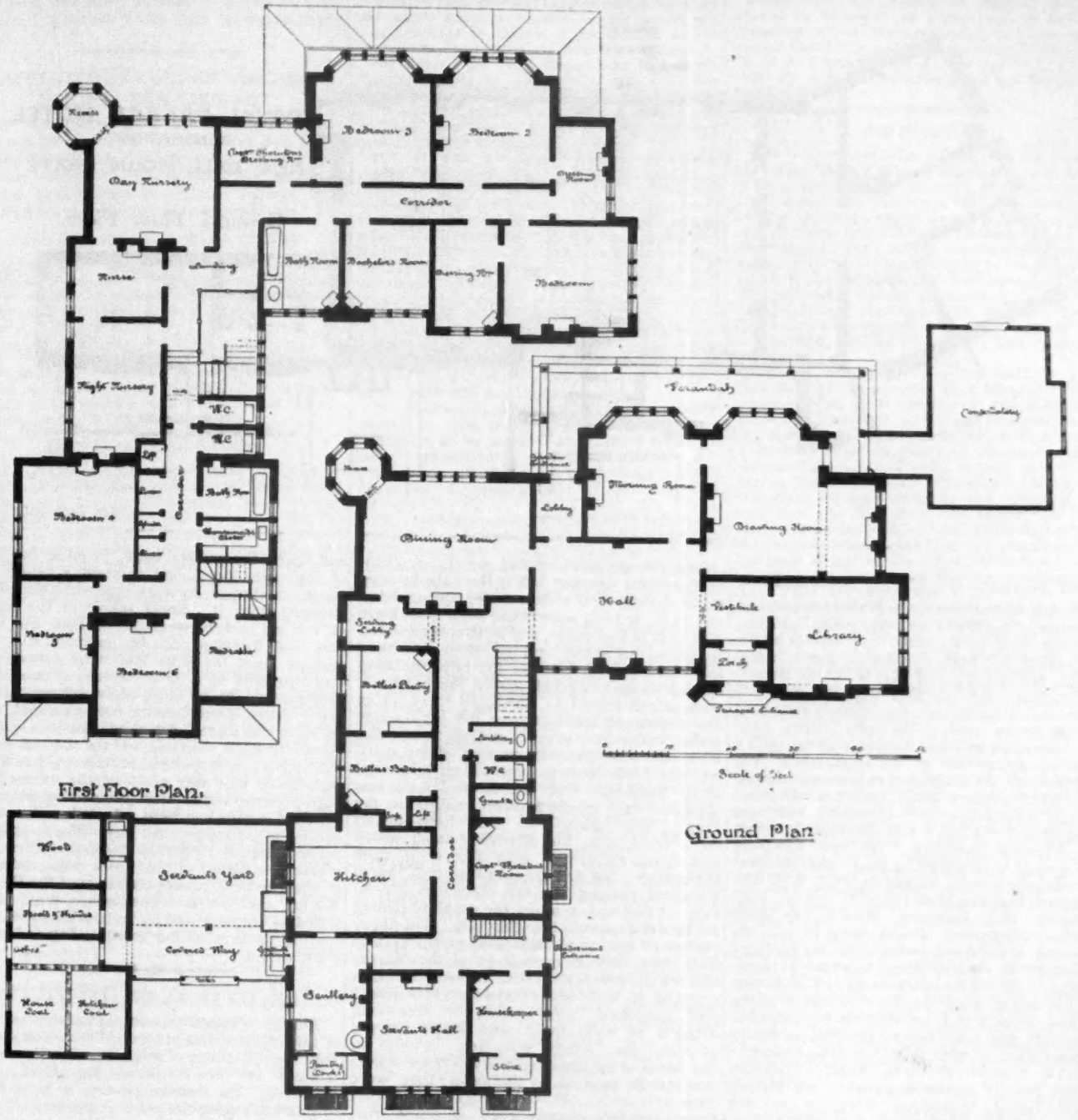


PHOTO-LITHO. SPRAGUE & Co 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

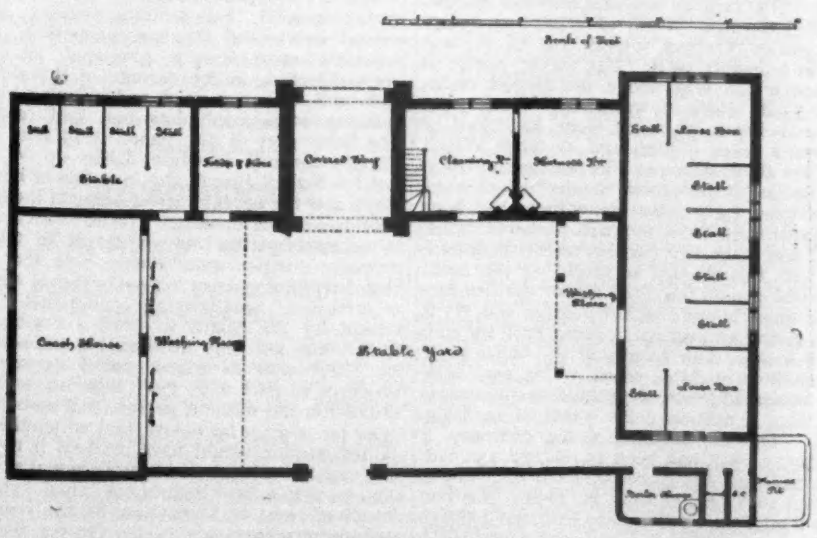
NEW BALL ROOM, ROYAL PALACE HOTEL, KENSINGTON.—Messrs. H. S. Legg & Son, Architects.




First Floor Plan.

Ground Plan

*House, "Maidenhatch," Pangbourne. Plans.*




*Stables, "Maidenhatch." Plan.*

he tower shown in connexion with the ling is built for the purpose of water ply, not only for the house and stabling, but for the lodges and several cottages which have been erected on the estate in harmony with the design for the house.

The works throughout have been executed from the designs of Mr. Ravenscroft, F.S.A of Reading, Messrs. Wheeler Bros., of the same town, being the contractors.

## COUNTY HOTEL, SALISBURY.

THIS building is of Ham stone, worked and fixed by Messrs. Trask & Son, of Norton, Stoke-under-Ham, Somerset; no builder was employed, but a staff of workmen were engaged with a foreman, and I had to superintend this as well as the building.

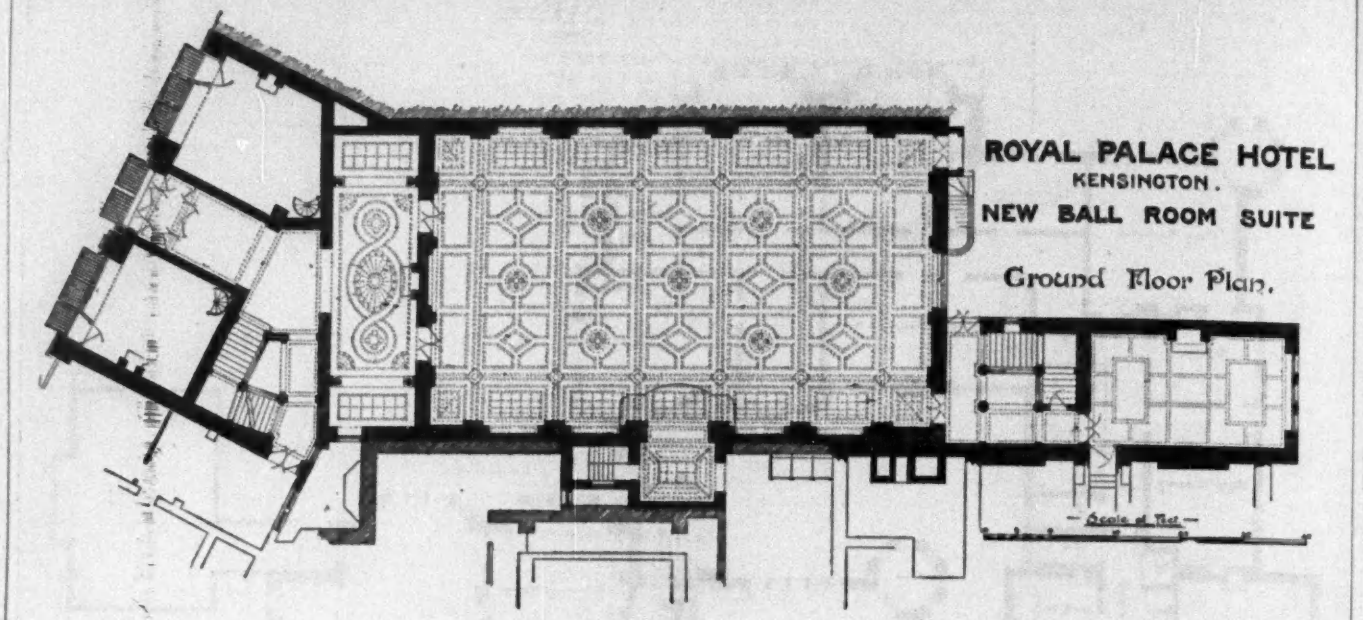
E. DORAN WEBB.

## ROYAL PALACE HOTEL EXTENSION.

THE illustration represents the architects' design for the ball-room erected at the above-named hotel, along with other additions. It is lighted by curved lights near the ceiling, being built in all round and having the large supper room over it carried in curved steel girders.

The decoration is chiefly in carton-pierre, with the lower part panelled in sycamore and satin wood. The floor is of oak constructed on steel springs. The cost of the building is about 32,000*l*. Messrs. Henry S. Legg & Son are the architects, and the contractors Messrs. Bywaters.

The drawing was exhibited at the last Royal Academy.




[See page 401.

## INSTITUTION OF CIVIL ENGINEERS.

At the ordinary meeting of this Institution on the 9th inst., Sir John Wolfe Barry, K.C.B., F.R.S., the President, in the chair, four papers, by Sir E. Leader Williams, M.Inst.C.E., Mr. Whately Eliot, M.Inst.C.E., and Mr. W. O. E. Meade-King, M.Inst.C.E., dealing with the construction and working of the Manchester Ship Canal, were read. The first paper gave an historical account of the undertaking, with a general description of its construction and equipment. As early as 1721 the necessity for providing efficient water communication between Manchester and Liverpool had been recognised, and many schemes had since that time been propounded. The first company proposing to construct a ship canal to Manchester had been formed in 1825, with Mr. Telford, Past-President Inst.C.E., and Sir John Rennie, Past President Inst.C.E., as Consulting Engineers. Docks were to be constructed at Dawpool, on the River Dee, for large vessels, the cargoes being lightered to Manchester, smaller vessels passing to Manchester, a distance of fifty-one miles. The depth of the canal was to be 15 ft., and the locks 110 ft. by 28 ft. In 1838 Sir John Rennie reported in favour of a ship-canal from Warrington to Runcorn; and in 1840, Mr. Henry R. Palmer, Vice-President Inst.C.E., made a report to the Mersey and Irwell Navigation Company on the improvement of their navigation, so as to adapt it for sea-going vessels. No action had, however, been taken on these reports, and it was not until 1882 that the question was revived. On June 27 of that year, a meeting of seventy leading merchants and manufacturers was held at the house of Mr. Daniel Adamson, when a provisional committee was formed, and the author and the late Mr. H. H. Fulton were instructed to make surveys and report on the "feasibility of constructing a navigation to Manchester available for ocean-going vessels." The late Mr. James Abernethy, Past-President Inst.C.E., was retained as Consulting Engineer. The author reported in favour of a canal with locks above Warrington, utilising the waters of the Mersey and Irwell, with large sluices to pass off floods. The bottom width of the canal was to be 100 ft., to allow of vessels passing at any point, but this width was afterwards increased to 120 ft. The depth was to be 26 ft. The Provisional Committee resolved to take action upon this report, and to make application to Parliament for powers to carry out the work. In 1885 the Ship Canal Bill was obtained, the plan being modified to meet the strong opposition to training walls in the Mersey, by substituting a semi-tidal canal along the Cheshire side of the estuary, commencing at Eastham, about six miles above Liverpool. The canal commenced at Eastham locks, which maintained the level at a depth of 26 ft., subject to increase on all tides which rise above 14 ft. 3 in. on the old dock-sill datum at Liverpool. The lower sill of the largest lock was 23 ft. below old dock sill, Liverpool, or 42 ft. below high water ordinary spring tides; the upper sill was 28 ft. below the ordinary water-level of the canal. A channel had been dredged below the locks to deep water, giving 6 ft. at low water spring tides, and 33 ft. at high water. At neap tides there was 13 ft. at low water, and 26 ft. at high water. Between this point and Runcorn the canal followed the south bank of the estuary, being carried by embankments across the bays. It then passed inland to Latchford locks, in an almost straight course, where the tidal action ended. Thence a straight cutting, three miles long, connected the tidal portion of the canal with the River Mersey, which, from this point to its confluence with the River Irwell, was absorbed in the more direct course of the canal. The water-level was here nearly on a level with the adjoining land, which had been embanked with the spoil from the cutting; the drainage on the north side of the canal passing into the Mersey as heretofore, a 5-foot siphon under the canal providing for land drainage on the other side. The upper portion of the canal passed, in cutting 30 ft. or 40 ft. deep, through the valleys of the Mersey and Irwell, which, with their tributary streams, supplied it with water between Manchester and Latchford locks; even in the long drought of 1896 there was ample supply of water for lockage purposes. Floods in the canal were dealt with by Stoney sluices constructed parallel to the locks; they were each 30 ft. wide. At Mode Wheel and Barton there are four sluices each, at Irlam five, and at Latchford three. The minimum width at the bottom of the canal was 120 ft., which enabled large vessels to pass each other at any point. The railway viaducts and the bridges afforded the same width of waterway, except at Runcorn Viaduct, which was 92 ft., and Barton Aqueduct, 90 ft. The swing bridge at Salford, which was above the largest docks, gave 75 ft. width of waterway. There were locks at Irlam, 7½ miles from Latchford, at Barton, 2 miles higher, and at Mode Wheel, 3½ miles above Barton. The Manchester Docks commenced at these locks, but the bottom width of the canal for 3 miles below them had been increased from 120 ft. to 170 ft., to enable vessels to lie and discharge cargoes without interfering with the passage of traffic on the canal. The total rise on the canal above the ordinary water-level below Latchford locks was 60 ft. 6 in., giving an average of about 15 ft. for each set of locks. The length of the canal to its termination is 35½ miles. The excavation had amounted to about 54 million cubic yards, including 12 million cubic yards of sandstone rock. The expenditure of the company to January 1, 1897, had been 15,168,795*l.* 15s. 11d.; and the traffic had increased from 925,659 tons in 1894 to 1,826,237 tons in 1896. The construction of the Eastham and Runcorn divisions of the canal, where it was found necessary to take the line across the bays by embankments between the canal and the estuary, was described in succeeding papers. Exceptional difficulties had been encountered with portions of the Pool Hall Bay embankment. At one point the line crossed the bed of an old stream filled with mud, and when the rubble bank, forming the toe of the outer slope, had reached a height of 20 ft., it slipped forward, carrying the clay hearting with it. Sheet piling at the back of the toe and between the rubble and the clay had therefore to be resorted to. At another point the work had to be stopped for some months at a level which allowed the embankment to be completely submerged at every tide. When tipping recommenced, the soft clay was forced out above the tops of the rubble banks on each side, and the clay had to be cut back on the slopes and replaced with rubble. An account was also given of the use of the high-pressure water-jet in pile-driving through the sand, which had been adopted with much success at Ellesmere Port Bay. The last paper presented a description of the Irlam Division, where the nature of the work was rendered difficult by the frequent crossings of the Rivers Mersey and Irwell. The papers were illustrated by cartoons and by lantern views of the leading features of the canal during and after construction.

## THE AUCTIONEERS' INSTITUTE.

The first general meeting of the new session of this Institute took place on Wednesday last at the rooms, Chancery-lane, when the inaugural address of the President, Mr. Field, was delivered. The address covered a great deal of ground, among the points considered being the improvements realised during the year in agricultural properties, freehold ground rents, and licensed properties, &c. In the sale of estates all kinds of properties had found a readier market, but building estates, after ground rents and licensed properties, had been the most keenly competed for. In every direction, in the vicinity of the metropolis and of every great and growing town, building estates and plots had sold readily. The latter part of the paper dealt with the attitude towards surveyors taken up by the London School Board, the question of betterment, and the eccentricity of some of the later developments of auctions. The expression used in notices by the School Board in taking property compulsory, "Please note that the Board will not consent to pay the fees of agents or surveyors," was strongly condemned. The refusal by the Board to serve a "notice to treat" was not only evasive, but unjust, and its effect was to coerce small owners of property to part with their little all without discussion and without professional assistance, often for a price far below that which the unskilled vendor would have realised if he had enjoyed the advantage of professional advice. The principle of "betterment" had been at length allowed by Parliament in the cases of the northern approach to the Tower Bridge, and in the Strand and the Tottenham Court-road improvements, and as these and others proposed were likely to be shortly carried out, a busy time might be expected in the metropolis.

After a vote of thanks, Mr. Peck, Vice-President, vacated the chair for the President,

in order that he might present to Mr. Brinsley (past President) a replica of the badge of office which it has been decided to confer on each of the Presidents when they have passed the chair.

## APPLICATIONS UNDER THE 1894 LONDON BUILDING ACT.

At the meeting of the London County Council on Tuesday, the Building Act Committee brought up the following list of applications under the 1894 London Building Act. Those applications to which consent was given were granted on certain conditions* :—

### *Line of Fronts and Width of Way.*

*Hackney, South.*—Eleven houses (four with bay windows) and a house with projecting shop front, on the south side of Lea Bridge-road eastward of Chatsworth-road (Mr. R. A. Flowers, for Mr. F. Russell).—Refused.

### *Width of Way and Temporary Building.*

*Westminster.*—Temporary wood and iron stores, offices and a workshop on the east side of Morpeth-terrace at its junction with Francis-street (Mr. G. Baines, for Mr. G. Martin).—Granted.

### *Open Spaces about Buildings.*

*City of London.*—Four warehouses in Fitchett's-court, and of the flank wall of the "Royal Mail" public-house, No. 17, Noble-street, to a greater height than the width of that court, and that the Council in the exercise of its powers under Part V. of the London Building Act, 1894, do sanction the rebuilding of the "Royal Mail" public-house with an open space at the rear (Messrs. Davis & Emanuel, for Mr. C. A. Lang and Miss C. E. Young).—Granted.

## *COMPETITIONS.*

Lunatic Asylum, Birmingham. — At a recent meeting of the Birmingham City Council the report of the Lunatic Asylums Committee, recommending that the plans of the proposed new Asylum at Holly Moor, Northfield, be entrusted to Messrs. Martin & Chamberlain, architects, Colmore-row, was referred back to the committee, with instructions that invitations should be issued to a limited number of architects to compete for the same. The Asylums Committee have since invited the following six firms to send in competitive plans :—Messrs. Martin & Chamberlain, Messrs. Cossins, Peacock, & Bewlay, Messrs. Mansell & Mansell, Mr. Frank B. Osborn, Messrs. Cross, Brookes, & Nichols, and Messrs. Ingall & Son. Accompanying the invitation was an intimation that, instead of offering the usual premiums for success, the committee had decided that each selected competitor should be awarded 100 guineas for the trouble of preparing the plans. The plans will be adjudicated upon by the committee, in consultation with the medical officers of the present asylum and the City Surveyor. It was desired that the competitors should give their full names and addresses.

Bury Art Gallery and Public Library. —The designs of Messrs. Woodhouse & Willoughby, architects, of Manchester, have been accepted for the erection of the Bury Art Gallery and Public Library. The chief purpose of the building is to house the Thomas Wrigley collection of pictures and statuary. The building will have frontages to Moss-lane and Silver-street. The cost of the buildings will be about 12,000*l.*—*Manchester Courier.*

# Correspondence.

### *To the Editor of* The Builder.

## THE INSTITUTE'S FELLOWSHIP AND EXAMINATIONS.

Sir,—The address of the President of the Royal Institute of British Architects well deserves the eulogy you bestow upon it in your leader in last week's issue of the *Builder* on the Fellowship question.

Mr. Aitchison's historical argument for the establishment of a systematic course of theoretical training is a valuable contribution to this vexed question, and ought to weigh heavily against those arguments which have hitherto been put forward in opposition to the principle of examinations. They are, after all, a sufficient test of a student's grasp of his subject to effect their object, which is, as the President observes, "*to keep out those who evince no real earnestness in or talent for architecture.*" But, Sir, if it be truly the aim of the Royal Institute of British Architects thus to purge the profession of ill-qualified men, why is it satisfied with a voluntary test which makes it possible for the laziest and least ambitious to shirk a proper training and to compete on equal terms with *bonâ-fide* architects?

Never was truer word uttered than that of the President when he said, "We may say with certainty that the set of the public mind is not in the direction of architecture," and it is equally true that until this state of things is changed we shall have no national architecture.

It is our own fault that there has been so little growth in the public mind. Look at the hold music and painting have obtained on the public mind within the last fifty years. How has this result been achieved? It has been done by founding powerful societies, as well as schools, colleges, &c., for systematic training in these arts, and by inducing Royalty and other leading lights to patronise these movements. The public Press—the great modern creator of public opinion—has accordingly given great publicity to all their proceedings.

The Institution of Civil Engineers has uniformly adopted the same wise policy, until it has thoroughly popularised the calling and made it almost impossible for a man to abstain from membership if he is to have any status in his profession.

We, however, have proudly wrapped our mantle around us, and thought that by parading our differences as to whether architecture should be called a profession or an art, and such-like vain questionings, we should do great things for art! And is there any wonder that we remain much as we were?

The Institute cannot yet claim to be representative of the profession, and therefore its proceedings evoke scarcely any interest in the public Press, as a quarter-column report, in the *Times*, of Mr. Aitchison's learned, lucid, and eloquent address, contrasted with a column and a half of Sir J. Wolfe Barry's, conclusively proves.

The Royal Institute of British Architects will never be influential in stirring public opinion until it can speak authoritatively and is backed by those whose utterances command general attention.

Neither the establishment of a theoretical examination for Fellowship, nor any of the schemes recently passed to encourage that class of membership, nor medals, will, in my humble opinion, suffice to make the Institute's voice authoritative. Having established a test of adequate training as an essential protection of public interests and a qualification for admission to Associateship, the Institute must sooner or later apply this principle of the exclusion of unqualified men consistently and generally, or drop examination altogether.

It must, in short, as a mere act of justice to its students, promote an Act of Parliament compelling all who aspire to the title of "Architect" to qualify by examination.

It is obviously unfair to those who have studied so hard and at great expense to have to compete with Dick, Tom, and Harry, who, alas! have just as much chance as they of success in the present state of public ignorance on the subject.

Tennyson disliked his college work and examinations, but who will say that the art of poetry has not been a gainer by his discipline?

I have never yet spoken to a young architect who has passed the R.I.B.A. examinations who did not acknowledge that the study they had entailed was of great value to him.

The curriculum and the examinations may need much modification, as the President suggests, and the Bill may possibly be one not obliging the registration of established architects against their will, but only in this way, and not by the present optional system, can we realise the aspiration of the President, to "drive away from the profession by a thorough examination all those who do not love architecture better than anything else."

W. H. Seth-Smith.

*** It does not appear to us that the policy of trying to push a profession by getting royalties and great persons to patronise it is a very noble one. As to the discrepancy between the short report in the *Times* of Professor Aitchison's address and the long one of Sir Wolfe Barry's, that is only another manifestation of the general indifference of the English mind about architecture. The daily papers cater only for the public taste; they find the public care nothing about architecture, and therefore they do not report anything about it. The editors of or writers in important daily papers might indeed endeavour to educate the public mind a little in this respect, but they themselves care even less than their readers. There is no class of man more utterly dead to art than the average English "daily paper" man.—Ed.

The Royal Institute of British Architects. —Her Majesty the Queen has bestowed the Royal Jubilee medal upon Professor Aitchison, A.R.A., the President of the Institute.—The festival dinner, in commemoration of the sixtieth anniversary of her Majesty's accession, and of the incorporation of the Royal Institute, will be held at the Whitehall Rooms, Hôtel Métropole, on Thursday, December 2, at 7.15 o'clock. The chair will be taken by the President, who will be supported by several distinguished guests.

* Names of applicants are given in brackets. Buildings are new erections unless otherwise stated.

## *SURVEYORSHIPS.*

Esher.—Mr. R. H. Jeffes, an assistant in the office of the Surveyor and Water Engineer to the Tottenham Urban District Council, has been appointed assistant on new roads, sewers, buildings, &c., in the Urban District of Esher and The Dittons, under Mr. A. J. Henderson, Engineer and Surveyor to that Council.

## *OBITUARY.*

Mr. W. Radford.—On the 1st inst. the death occurred of Mr. William Radford, civil engineer, at his residence, Withington-road, Whalley Range. The deceased, who was born in 1817, was articled to a firm of engineers, and he spent a good deal of his earlier business career abroad. He settled down in Manchester in 1850, and he was soon afterwards appointed bridgemaster and county bridge surveyor for the Hundreds of Salford, Blackburn, Leyland, Amounderness, and North and South Leyland. He filled the office of chairman of the Moss Side Local Board for a long time. He had a large practice as a consulting engineer for sanitary and drainage works.

Mr. Thomson Plevins. — The death of Mr. Thomson Plevins, architect and surveyor, Birmingham, took place recently at his residence, Eaton-road, Coventry, at the age of seventy-two. The deceased gentleman was the son of Mr. Plevins, of the firm of Messrs. Pashby & Plevins builders, and was born in Birmingham in July, 1825. Mr. Plevins, sen., subsequently became a surveyor, and, when his son's education was completed he took him into his office, and taught him the profession of an architect and surveyor. When Mr. Thomson Plevins was little more than twenty-one years of age his father died and he then began to build up a practice of his own in Waterloo-street. His expert knowledge of the laws of building was invaluable to clients engaged in litigation, especially when questions relating to rights of ancient lights were involved. Mr. Plevins was also largely employed in negotiating sales of land and property to railway companies and corporate bodies. In compensation cases his advice was eagerly sought by property owners. When the Birmingham Improvement Scheme was projected, Mr. Plevins was retained by nearly the whole of the owners of the property in the scheduled area. He was employed in a similar capacity by the owners of the property which was purchased for the enlargement of New-street Station, and he further negotiated the sales of the property acquired by the Midland Railway Company in connexion with their enlargement scheme in Suffolk-street. For many years Mr. Plevins was the consulting architect employed by the late Mr. Isaac Horton, and was responsible for the erection of many of the largest blocks of offices and commercial buildings in the central parts of the city. He designed the group of buildings, including the Midland Hotel, extending from the London and Midland Bank to Lower Temple-street; the block in Colmore-row, part of which was occupied as the Grand Hotel prior to the extensive scheme of reconstruction; Colmore Chambers, Newhall-street; Union Chambers, Temple-row; and groups of buildings in New-street, High-street, Corporation-street, Spiceal-street, and other central thoroughfares.—*Birmingham Weekly Post.*

## *GENERAL BUILDING NEWS.*

Reopening of Church, Breamore, Hants.— The Bishop of Winchester has just visited this parish for the purpose of consecrating an addition to the old churchyard, reopening the lately restored church, and dedicating a new organ. The church has been restored under the direction of Messrs. Christian and Purday, of Whitehall-place, the work being done by the workmen on the Breamore Estate, under the superintendence of Mr. Stanford. The church, it is stated, dates from Saxon times. Some indications of its early origin have always been visible, and more have been discovered in the course of the present restoration.

Reopening of North Carlton Church, Lincolnshire. — The parish church of North Carlton has just been reopened after restoration. Messrs. W. Mortimer & Son, of Lincoln, were the architects, and Messrs. H. S. and W. Close were the contractors.

Side Chapel, All Saints' Church, Edinburgh.—The new side chapel which has just been erected in All Saints' Episcopal Church, Brougham-street, Edinburgh, in order to commemorate the thirty years' work there of Canon Murdoch, the incumbent, was dedicated to St. Mary on the 3rd inst. The side chapel, which cost about 1,300*l.*, has been erected from the designs of Dr. Rowand Anderson.

New Aisle, Parish Church, Leigh, Essex.— The erection of the new aisle on the south side of the Parish Church at Leigh has just been commenced. The contract of Messrs. Hammond & Sons, of Romford, has been accepted at 1,400*l.* Mr. Smee, of Leigh, is the architect.

Parish Church, Tobermory, Mull, Argyll.— The new Established Church at Tobermory has just been opened. The church is arranged to accommodate 300 sitters, and cost about 2,000*l.* The

building consists of a nave and sanctuary, with a tower and porch at the west end. The church was designed by Mr. John Robertson, Inverness, and the contractor for the whole work was Mr. Donald Fletcher, Tobermory.

ENLARGEMENT OF DOWLES CHURCH, SALOP.—A north transept has been added to this church. Here the organ has been placed, and a vestry provided for clergy and choir. The alterations have been carried out under the supervision of Mr. Gethin, architect, of Kidderminster, by Mr. P. Albert, of Rock.

MISSION ROOM, SOUTHAMPTON.—In connexion with the Church of St. Mark's, Fitzhugh, a mission-room has been erected in a new road opposite the new Southampton West station on the London and South-Western Railway. The mission-room has a frontage to it of 20 ft., and a clear width inside of 18 ft., the length of the room being 53 ft. The height of the walls, of red brickwork, is about 14 ft. to the wall plate; and the roof is open-timbered and boarded to the apex, the rafters showing. At the eastern end of the new building is a raised platform, with communion table, lectern, and the usual accessories. There is sitting accommodation for 150 persons. The mission room was designed by the honorary architect, Mr. A. F. Gutteridge, of the firm of Messrs. Mitchell, Son, & Gutteridge, and the erection was carried out by Mr. A. Warden.

WESLEYAN CHAPEL, BURTON-ON-TRENT.—The memorial stones of a new Wesleyan chapel, Sydney-street, Burton, have just been laid. The new building, which will be of the Gothic style, is to seat 400 people. It will be faced with pressed bricks, with Hollington stone dressing, and will have an open timbered roof. The windows will be of cathedral glass. There will also be a heating chamber and vestry. The dimensions of the chapel will be 56 ft. long by 38 ft. wide. Mr. C. F. Underhill is the architect, the contractor being Mr. J. Harlow.

PRESBYTERIAN CHURCH, BENWELL, NOTHUMBERLAND.—The foundation stone of Benwell Presbyterian Church of England has just been laid. The church is being built on a block of land in Armstrong-road, bounded on the west by Hugh-gardens, and on the east by Frank-street. The hall occupies the eastern portion of the site, and between church and hall the classrooms and vestries are placed. The structure is planned with nave and aisles, the aisles and west end having galleries, and the whole provides sitting accommodation for 650 persons. The entrances are placed in the west front, giving access to porch and vestibule. To right and left are the gallery staircases, with doors for egress, to north and south. Two doorways at the east end give access to the vestries and classrooms, and also answer as a means of exit when required. The floor of the church has a fall of 9 in. in the length. Pulpit and Communion platform are at the east end, and the west gallery has been reserved as the organ chamber. The site being on the sloping banks rising from the Tyne, the architects have taken advantage of the fall of 16 ft. in the length of the site to get the caretaker's house, tea rooms, heating chamber, and coals under the hall and classrooms. On the same level as the church, and immediately behind, are placed the minister's vestry, a room for ladies, and a small hall for prayer meetings and infant classes, and a flight of short steps leads to the large hall, with accommodation for over 400 persons, the principal entrance to which is in Armstrong-road. The first floor over the vestries is occupied by three classrooms, and there are lavatories on all the floors. The block of buildings is designed in the Early English style. The walling is of local stone, in coursed rock-faced facing, with chiselled stone dressings. The west front has two projecting porches with a mullioned and traceried window in the gable above, and to the north a small octagonal turret breaks the line between the gable and staircase roofs, a buttress marking the southern division. Internally the nave is divided from the aisles by an arcade of five bays on either side, and the east gable has a traceried rose window. The roof and internal fittings, gallery front, and pews are of pitch pine. Previous to letting the contract, the architects had trial holes dug on the site and found it would be necessary to go down about 16 ft. all along the west front to secure a suitable foundation. To overcome this difficulty, concrete piers were carried down to the necessary depth, the spaces between being bridged with concrete blocks about 4 ft. wide and 2 ft. thick, in which rolled steel girders were embedded to strengthen the material and tie the piers together. The whole of the foundations throughout are of Portland cement concrete, and are taken down to the clay. Messrs. Bradenoch & Bruce are the architects. The tender of Mr. Thomas Hunter, of Washington, was accepted for the building.

EPISCOPAL CHURCH, POSSILPARK, LANARKSHIRE.—The foundation stone of St. Matthew's Episcopal Church, Possilpark, was laid recently. The new church, which is situated in Ardoch-street, is from designs by Mr. H. D. Walton, architect, Glasgow. The front block has a frontage to Ardoch-street of 60 ft., and consists of two large rooms, capable of being thrown into one, on the ground floor, with an upper hall, chancel, and vestries above. Two entrance porches and lobbies will give access to the church. The front wall will be of red stone, the interior walls being faced with brick, and the hall will have an open timber roof. The church, which will consist of nave and aisles, organ chamber, vestries, and chancel, will be seated for about 500. The contractors are:—Mason and joiner work, Messrs. E. C. Morgan & Sons; slater work, Messrs. Hamilton & Co.; plumber work, M. Sproul; painter, John Watson; and the total cost will be about 3,000*l.*

BOARD SCHOOL, LINTHWAITE, YORKSHIRE.—Sir James Kitson, Bart., M.P., opened recently the first school built by the Linthwaite (Huddersfield) School Board. The schools have accommodation for 437 children in the mixed, and 140 children in the infants', department. The site comprises 4,598 square yards. There are open and covered playgrounds, provision for cookery and manual instruction classes, as well as for the ordinary meetings of the board. Including furnishing, the cost has reached 5,410*l.* The architect was Mr. E. W. Lockwood, Huddersfield.

WESLEYAN SUNDAY SCHOOLS, TONBRIDGE.—The foundation stone, fifteen memorial stones, and twenty-four memorial bricks have just been laid in connexion with the new Wesleyan Sunday Schools now in course of erection at Tonbridge. The plans for the new schools were prepared by Mr. Charles Bell, and the contract was given to Mr. R. Langridge, builder, of Tonbridge.

NEW HALL, ELLESMERE COLLEGE, SHREWSBURY.—A new hall has just been erected in connexion with Ellesmere College, from the designs of the architects of the college, Messrs. Carpenter and Ingelow. It is 130 ft. long and 36 ft. wide, and the height inside is 45 ft. to the apex of the roof. The hammer-beam roof is of firwood, with open tracery work; and ten class-rooms, which are designed to abut on the sides of the central room, will be added at some future time. The hall is built of brick, with stone dressings, and is paved with wood blocks. The total cost of the structure has been 5,202*l.*—*Shrewsbury Chronicle.*

PROPOSED TECHNICAL SCHOOLS, SWANSEA.—Col. W. R. Slake, R.E., one of the Local Government Board Inspectors, sat at the Guildhall, Swansea, on the 29th ult., to enquire into an application by the Swansea Town Council for the sanction of the Board to borrow 9,600*l.* for the purposes of technical instruction. Mr. H. W. Wills (architect) produced the plans of the new buildings, and said tenders had been received, the lowest of which was 8,162*l.*

BOARD SCHOOL, EASTVILLE, BRISTOL.—A new Board School is being erected at Eastville. In the centre is a large rectangular assembly hall, with eleven class-rooms and a couple of cloak-rooms surrounding it. Some of the class-rooms are for fifty children, and others for sixty; and the total number for which the school is built is 600. There are entrances from each end, with a cloak-room and lavatory by the side of the corridor leading into the assembly hall, and into this central hall the class-rooms open. The architect is Mr. E. W. Barnes, of Bristol, and the contractor is Mr. J. Browning, of Fishponds.

WESLEYAN SCHOOLS, FELLING, DURHAM.—The foundation-stone laying ceremony in connexion with the proposed new Wesleyan Chapel Schools at Felling took place on the 3rd inst. The building is of local stone, and the arrangement of the rooms is as follows:—A central hall or school-room, 57 ft. by 30 ft., forms the main department, having at the sides of same entrance-halls, book-stores, cloak-rooms, and four class-rooms, each 12 ft. square, and two large class-rooms, each 18 ft. by 16 ft., the latter being divided from the school-room by movable partitions. At the west end of the school-room is placed a corridor 5 ft. wide, out of which opens back entrance, ladies' meeting-room, 15 ft. by 12 ft.; kitchen, 15 ft. by 10 ft. 6 in., and lavatory accommodation for both sexes. Adjoining these rooms and directly connected to school-room and corridor is an infants' room and vestry. The work is being carried out from the designs and under the supervision of Mr. James W. Frazer, architect, Newcastle; the contractor being Mr. Robert Davidson, of Felling.

GRAMMAR SCHOOL, NORMANTON, YORKSHIRE.—A new grammar school has just been opened at Normanton by the Earl of Crewe. There are two porches to the building—which is composed of Nostell pressed brick, with Huddersfield stone dressing—and the main entrance, on the south side, by a short flight of steps, is carried up into a castellated tower, 30 ft. high. The assembly hall is 40 ft. by 22 ft., class-room 26 ft. by 20 ft., laboratory 32 ft. 6 in. by 20 ft.; in addition to which are the master's room, cloak-room (large enough for future extension of another bay to the assembly hall and a class-room at the end of it, provided for in the competitive designs), caretaker's room, store-room, lavatories, &c. A corridor, with roof light in coloured glass, connects the east to the south lobby, giving access to the various apartments. Only a third of the design is now executed for want of funds, and when the enlargement is accomplished the whole building will be duplicated at the west side as a higher grade school for girls. The erection has been superintended by Mr. C. W. Richardson, architect (Messrs. Richardson & Simpson, Wakefield, the designers), and Messrs. R. Leake & Sons, Normanton, are the contractors.

SUNDAY SCHOOLS, OLD HILL, STAFFORDSHIRE.—The foundation-stones of Sunday-schools in connexion with the Primitive Methodist Tabernacle, Old Hill, have just been laid. The architect is Mr A. Ramsell, of Dudley. The interior arrangements will consist of a central hall, 41 ft. square. There will be five class-rooms, two of which will be on the ground floor and three above. The upper class-rooms will be arranged in gallery form, and both the upper and lower rooms will be partitioned off by revolving and patent swivel-sliding partitions. The building will be erected by Messrs. Dorse & Son, Cradley Heath.

BOARD SCHOOL, ABERDEEN.—Aberdeen School Board has accepted from local contractors offers, amounting in the aggregate to 11,373*l.* odd, for the erection at Kitty Brewster of a public school (mixed) for 1,000 pupils. The site, which, including playgrounds, measures two acres, has a frontage to Great Northern-road of 370 ft.; it is also bounded north and south by proposed new streets. The school is a three-story erection in the Italian Renaissance style, and will be built of granite, and surrounded by a stone cornice. The length of the building on the Great Northern-road front is 110 ft., the breadth 81 ft., and the height to the top of the parapet course 50 ft. Internally there will be a large corridor and staircases in the centre of the building, with class-rooms opening from both sides, and teachers' accommodation at each end. On the ground floor are gymnasium, and class-rooms for advanced subjects, the elementary departments being on the two upper floors. The architects are Messrs. Brown & Watt, Aberdeen.

SCHOOLS, WATFORD.—The new "Victoria Schools" in Fearnley-street, Watford, were opened recently by the Hon. R. Capel, as Chairman of the School Board. The schools give accommodation for 1,020 children. The entrances for girls and infants are in Fearnley-street, and the boys' entrance is in the side road. The building is of two stories, the ground floor being devoted to the girls and infants, and the first floor to boys. The girls' school consists of four class-rooms, each for sixty children, and a central hall 35 ft. by 34 ft. The infants have a similar central hall adjoining and communicating with five class-rooms accommodating 300 children. The boys' central hall is 71 ft. by 34 ft., approached by two stone staircases, with eight class-rooms arranged on three sides of the same, each for sixty boys. Lavatory accommodation is provided for each school, and hat and coat rooms. There are four rooms for teachers, two store-rooms, and two for caretaker. The building is faced externally with grey bricks with dressings of red brick and stone, and all rooms are finished with a glazed brick dado in two tints, 4 ft. high, and above the same the walls are faced with white Arlsey and Fletton bricks. The floors are Moreland's fireproof laid with Roger Lowe's pitch pine blocks. The roofs are covered with slates—a central feature being the bell cote. The heating has been executed by Messrs. Musgrave & Co., Limited. In addition to this the babies' room is provided with Shorland's Manchester grate, the ventilation being on Shorland's system. The latrines and urinals are detached and have been fitted up by Messrs. Bowes, Scott, & Western. The whole has been carried out by Mr. C. Brightman, at a cost of about 9,500*l.*, from the designs of Mr. C. P. Ayres, which were selected in competition. Mr. R. T. Tonge acted as clerk of the works.

BOARD SCHOOL, BYKER, NORTHUMBERLAND.—The Newcastle School Board's new Raby-street school at Byker, has just been opened by the Mayor (Mr. John Goelden). The main block of the buildings is near the front boundary of the site, and within a few feet of Brinkburn-street, the junior pupils being accommodated on the ground floor and the senior pupils on the first floor. The design and arrangement is on the central hall principle. The halls on each floor are 73 ft. by 30 ft. Large windows at each end light these halls. Opening from the main hall on the ground floor seven class-rooms are arranged—size, 26 ft. by 24 ft.—and, being separated from the main hall by glazed screens, every class-room can be viewed and controlled from the central hall. The first floor is similar to the ground floor. Each set of desks is lighted from the left hand of the pupil. Entrances are provided at each end of the central hall on the ground floor, and there is a similar arrangement on the first floor, reached by wide staircases. Between the entrance doors and central hall cloak-rooms are placed. Next to the main entrances are arranged at each end three rooms for teachers (six in all) with lavatory accommodation. The infants' school is designed as a one-storied building at the north-east corner of the site, and arranged on the same principle as the main school, the central hall being 62 ft. by 32 ft., with desks for one class. Off this main hall are seven class-rooms with glazed screens as in the main school. Two entrances are provided, with cloak-rooms adjoining, and also two rooms for teachers. Three large playgrounds are provided for infants, juniors, and seniors, each with playsheds and accessories. All walls are lined throughout to a height of 4 ft. with glazed bricks. The schools are warmed throughout by hot water on the low-pressure system. The caretaker's house is arranged in the centre of the site. The cellar containing the boilers requiring the attention of the caretaker is in communication with his house. The accommodation is as follows:—Seniors, 540; juniors, 540; infants, 480—total, 1,560. The total outlay on building work will be about 12,950*l.* The contractor for the work is Mr. Thomas Hunter, of Washington. The heating

and ventilating is by Messrs. Dinning & Cooke, Newcastle. The clerk of the works was Mr. Boocock, and the architect was Mr. W. Lister Newcombe, of Newcastle.

HOSPITAL, MOTHERWELL, LANARKSHIRE.—The new infectious diseases hospital, which has been erected near Motherwell by the District Committee of the Lower Ward of Lanarkshire, was opened on the 25th ult. The hospital has accommodation for 100 adult patients. The several blocks of the building have been kept as separate and distinct as possible. The administrative buildings are placed in a detached position at the front of the hospital. This block comprises, on the ground floor, resident physician's office, dispensary, sitting-room, and bedroom, matron's office, sitting-room, nurses' dining-room and sitting-room. The bedrooms for matron and nurses are on the upper floor, apart from the servants. The kitchen is centrally placed for the distribution of food to the wards. The kitchen floor is paved with red tiles, and the walls are lined with glazed tiles. To the rear of the kitchen are scullery, pantry, larders, and a laundry for the staff. There are four main ward pavilions, each being divided into two ten-bed wards, and with two separation one-bed wards attached. The main wards are 60 ft. long by 26 ft. wide and 13 ft. high. All internal angles in wood and plaster work are rounded or hollowed. A window, 2 ft. 6 in. from the floor and extending to the ceiling, is placed between each bed, and is constructed of double-hung sashes to three-fourths of the height, with a hinged hopper fanlight at the top, to open inwards. To enable convalescent patients to enjoy the sunshine, there is a verandah at the south end of each pavilion. Attached to each pavilion is a suite of undressing, bathing, and dressing rooms, through which the patients pass on arrival or on being discharged from the hospital. The wards are heated by means of open fireplaces and low-pressure hot water. The low-pressure hot-water apparatus consists of cast-iron pipes under the floor, having water circulating from and to a steam heater in the basement. These pipes have branches rising to radiators in the wards. The radiators are placed against the external walls, under each alternate window, and two circular radiators, placed in the centre of each ward, secure equal distribution of temperature. Fresh air is admitted to the radiators by regulating valves, and after being heated is admitted into the wards. There are two means of exhaust ventilation in each ward—viz., vertical shafts in the end walls and ventilators in ceilings. The isolation and observation pavilions are the same in plan; each pavilion is divided into four wards for one and two beds. These wards will be used for the isolation of concurrent infectious diseases which may occur, and for observation of cases of doubtful diagnosis. All these wards have their duty-rooms and other appurtenances, and the internal finishings, heating, and ventilation similar to main wards. The laundry block is divided into four sections—viz., stabling, boiler and engine-rooms, disinfector, destructor and mortuary, and laundry. There are two systems of drains, one for the roof and surface water, and the other for sewage. The sewage is purified before leaving the hospital grounds. For this purpose two tanks and filters have been constructed, and can be worked continuously or intermittently, with or without the use of chemicals, and in such a way as secures aeration of the filters. All the walls are faced with stone and lined on the inside with brick, having a hollow space between for ventilation. The passages, lavatories, bath-rooms, and water-closets, have the dado lined with white tiles. The lathing is of steel instead of wood. There is a complete system of subways connecting the various buildings. In these the steam and water mains, &c., are placed, and access can also be had through them to the several buildings. The hospital is lighted throughout by electricity. The cost of the building, including fittings, apparatus, machinery, furniture, &c., is estimated at about 37,000*l*. The architect is Mr. Alex. Cullen, of Hamilton and Motherwell.

NEW PAVILION, EDINBURGH ROYAL INFIRMARY.—The plans for the new pavilion which it was resolved to erect in connexion with Edinburgh Royal Infirmary, in order to commemorate the Queen's Diamond Jubilee, came before the Dean of Guild Court on the 28th ult., and were passed. The new pavilion is placed at the southern end of the Royal Infirmary grounds, with its longer axis running north and south, immediately to the west of the existing medical pavilions. It consists of a basement (entirely above ground), three floors of wards, and an attic floor. The basement contains a bathing establishment, which includes a Turkish bath, with three hot rooms, a needle bath, douche baths of various kinds, a vapour bath, and sulphur and other medicated baths. A cooling-room is provided, and there is also accommodation in the way of dressing-rooms, hot linen rooms, attendants' rooms, lavatories, &c. In the basement, two four-roomed houses for resident officials are also provided. The three floors above the basement contain three wards. At the southern end of the pavilion is situated on each floor a ward for twenty-two beds, and access to this is gained from the main staircase, which is at the northern end, by a corridor. Off this corridor are, on one side, an operating room, two special wards of two beds each, a waiting-room, a demonstration room, and a physician's room; and, on the other, a kitchen, a bath-room (with three baths), a lavatory and other conveniences, an isolation ward, a linen room, and a parlour and bedroom for the nurse in charge. Besides these rooms, stores for pails, brushes, &c., separate lifts for food and patients, and a store for patients' clothes are provided off a cross corridor. The baths, &c., in connexion with the large ward are placed in circular towers at its southern end. The operating room is lighted from both the north and west. The windows are set in steel frames of large size. The waiting-room and demonstration-room can, when not in use, be thrown into one by means of a movable partition, and they then serve as a convalescent-room for patients. The attic floor contains fourteen separate rooms for nurses and nine separate rooms for servants, besides bath-rooms, lavatories, &c. The pavilion altogether provides accommodation for about ninety-seven persons, excluding the two houses in the basement floor. The walls are lined with brick, with a hollow space between it and the main wall. Glazed tiles are freely used, both in walls and floors, in corridors, bath-rooms, lavatories, kitchens, operating-rooms, staircases, &c. The floors are constructed of iron and concrete, without wood joists. The ward floors are laid with hardwood planks, but these are nailed into a thick coat of specially prepared asphalte, laid above the concrete. All corners are rounded, and cornices, door mouldings, &c., are almost entirely absent. The pavilion is warmed by steam in pipes and coils. Fresh air is admitted at numerous points, and the foul air is to be removed by electric fans, placed in a tower at the north-east corner. The lighting is to be by electricity. On the south front, between two of the upper floors, and forming a balcony, are panels, which will contain inscriptions. The total cost of the pavilion is expected to be about 40,000*l*. The architects are Messrs. Sydney Mitchell & Wilson.

BUILTH COTTAGE HOSPITAL, BRECONSHIRE.—This institution was opened on the 27th ult., by Miss Thomas, of Llwynmadoc. The building was erected from designs by Mr. Telfer Smith, Builth, who has supervised the work. It is of rectangular shape, with about 73 ft. frontage, facing due south. The external walls on the front and two sides are of red Ruabon bricks, with dressings of Victoria stone. On the ground floor, a committee-room and matron's private room flank the entrance hall on each side, while the men's day-room is on the left beyond, and the women's day-room on the right. Behind each of these is a single ward for accident cases or any requiring isolation. The kitchen and various offices, including laundry and drying room, are at the rear. The first floor is reached from the lower corridor by a staircase. On the right-hand side there is a ward for women with five beds, and on the left there is similar accommodation for men. There is also bedroom accommodation for the officials. There are bath-rooms and lavatories for the wards on each floor. The building is covered with Bangor slates and red crests. The contract for the building has been carried out by Messrs. T. Jones and J. Price for 1,650*l*.

SANATORIUM, HASTINGS.—The memorial stone was laid recently of the new Sanatorium buildings just approaching completion at Ore and adjoining the building at present in use at Cackle-street. The building and road have cost about 12,000*l*., and other accessories about another 2,000*l*. The plans were prepared by the Borough Engineer (Mr. P. H. Palmer). Mr. Peter Jenkins (of St. Leonards) is the contractor, and Mr. Bouley clerk of the works. Altogether there are eight buildings; four buildings furnish the hospital accommodation, two being isolation wards. Altogether there is accommodation for forty-six inmates.

HOSPITAL, KETTERING. — A new General Hospital was opened at Kettering recently. The building is situated a short distance west of the Midland Railway, and has a frontage to the Rothwell-road. The material used has been the local brown stone, relieved with white Weldon stone, the roof being of red tile. It is two stories in height, and the caretaker's cottage is at the Rothwell end of the site. The men's wing is on the west side, and the women's wing on the east side, with the administrative block in the centre, direct communication being obtained between the different parts by a straight corridor. Ingress is obtained at two points—the main one (for the admission of patients) and one lower down (for friends of patients). Opposite the vestibule, which is to be fitted up as a waiting-room, is the matron's room, with a small private ward adjacent. Adjoining the operating room is a small drug store. The men's ward is 40 ft. by 20 ft. Accommodation is provided for ten patients, exclusive of two cots for younger patients. Close by is a scullery, and near to that is a room for storing linen. The sanitary block consists of a bath-room and lavatory. The women's wards correspond with the men's, and this side of the building also contains the dining-room for the staff, and a kitchen, as well as a store and scullery. Upstairs is a board-room overlooking the Rothwell-road, the matron's bedroom, six bedrooms for the staff, a bath-room and lavatory. The attic floor contains four more dormitories. In the basement are the heating chambers, a washhouse, coal-place, and a mortuary. The architects were Messrs. Gotch & Saunders, of Kettering, and Mr. A. Barlow was the contractor.

HOSPITAL, BELFAST.—Several new wards and an operating-room have just been added to the Ulster Eye, Ear, and Throat Hospital. The extension comprises new bath-rooms and water-closets. The floors are tiled and the walls cemented. New day-rooms are provided for the male and female patients, and eight new private wards are added. The operating-room is constructed at the top of the hospital. The contract was carried out by the late Mr. Isaac Hewitt, builder, under the superintendence of Mr. Henry Seaver, architect, Belfast.

SHEFFIELD CITY HOSPITALS.—Mr. R. Deane Sweeting, one of the Inspectors of the Local Government Board, held an inquiry at the Sheffield Town Hall, on the 5th inst., in reference to an application by the City Council for power to borrow 21,800*l*. for the provision of additional accommodation at the Lodge Moor Hospital, and 2,000*l*. for the purchase of a site for a smallpox hospital. Amongst those present were the Town Clerk, Mr. H. Sayer; Mr. C. F. Wike, City Surveyor; and Mr. E. M. Gibbs, architect for the new buildings. The Town Clerk explained that the accommodation which was intended to be provided was an administrative block of a permanent nature, which would be so arranged that it would be available however much the accommodation at the hospital should be extended.

EXTENSIONS, PONTEFRACT WORKHOUSE.—Alteration and improvements are to be carried out in connexion with Pontefract Workhouse. These consist of developments of the accommodation for vagrants, and extensions of the laundry arrangements. Mr. W. H. Greaves, of Pontefract, is the architect.

LIBERAL CLUB, HALIFAX. — At New Pellon Halifax, a new Liberal Club has just been opened. On the ground floor is the billiard-room, allowing space for two tables; and on the first floor is the reading or assembly room, furnishing accommodation for 400 persons. The plans have been prepared by Mr. Medley Hall, architect, Northgate, Halifax.

CO-OPERATIVE BUILDING, ALEXANDRIA, DUMBARTON.—The new building erected in Bank-street, Alexandria, at a cost of about 7,000*l*., for the Vale of Leven Co-operative Society, was opened recently by Mr. James Grey. The building, which was designed by Messrs. Boston, Menzies, & Morton, of Greenock and Alexandria, has a frontage of 90 ft., is three stories high, and built of red sandstone. The ground floor consists of shops, the mid floor of a lesser hall to seat 200 persons, and office accommodation, and the top flat of a main hall, capable of holding 900 persons. There is a gallery at one end, and the platform is in a recess at the other. The building is lighted by the electric light.

BANKING PREMISES, KNIGHTON, RADNORSHIRE.—The "North and South Wales" Banking Company are now erecting a block of offices at Knighton. The new buildings, which have a frontage to Broad-street of about 60 ft., and to George-lane of 50 ft., consist of two wings for offices, the centre space being for the private house for the manager. The right wing is to be occupied by the bank proper. The bank is two stories high, with an attic above, and is built of terra-cotta, from the works of Mr. Dennis, at Ruabon. There are gables to both wings, with ornamental finals. The warming apparatus will be supplied by Mr. W. B. Stedman, of Knighton. The architect is Mr. Joseph Bratton, of Birkenhead; and the contractors Messrs. McLachlan & Batkin.

NURSES' HOME, SUNDERLAND.—An additional wing, to be utilised as a nurses' home, is being added to the Sunderland Infirmary, in commemoration of the Queen's Diamond Jubilee. When completed, the new wing will contain a sitting-room and fourteen bedrooms, with bathroom and lavatory accommodation. The new portion, which will be detached from the main building, is to be L-shaped, and corridors will extend the whole length of the erection. The contractors are Messrs. Walter Scott & Son, of Sunderland, and the architects are Messrs. Joseph Potts & Son, of Newcastle and Sunderland.

NURSES' HOME, SWANSEA. — The foundation-stone of the Nurses' Home which is to be erected adjoining Swansea Hospital, in commemoration of the Queen's Jubilee, was laid recently. The plans for the work were prepared by Messrs. Wilson & Moxham, architects; and Mr. Thomas Davies is the contractor.

DRILL HALL, HEATHFIELD, SUSSEX.—A new Drill Hall is to be erected at Heathfield, and the foundation-stone has just been laid. The hall is given by Mr. Weston, a local builder, the architect being Mr. F. A. Stevenson, of Messrs. Stevenson & Earp, Eastbourne.

HOTEL ALTERATIONS, LUDGATE-HILL. — The "Blue Last" in the Broadway, Ludgate-hill, has just been altered and improved. On the ground floor is a new luncheon bar, and the second saloon bar has also been altered. Two entirely new staircases provide access to the upper portions of the house. On the first floor is the public dining-room, which has been enlarged. Here a grill has been fitted. Close by there is a smoking-room, with lavatory accommodation. On the second floor are a private dining-room and a remodelled and enlarged kitchen, whilst on the third floor several additional bedrooms have been fitted up. The new staircase is of Stuart's granolithic concrete, and the lobbies as well as principal landing are paved with mosaic. The whole of the works have been carried out from the designs and under the superintendence of Messrs. G. Elkington & Son; whilst Mr. James Carmichael, of Wandsworth, was the building contractor.

MEMORIAL INSTITUTE, CAMBRIDGE.—The St. Barnabas Memorial Institute, St. Barnabas-road, Mill-road, was opened by the Vice-Chancellor (Dr. A. Hill) recently. The building is at the corner of St. Barnabas-road. The Institute comprises downstairs a central hall for Sunday-school and evangelistic services, with class-room and reading-room, and boys' carpentering shop and kitchen; and upstairs three class-rooms, young women's reading-room, &c., and a parish room, having a frontage of 30 ft. Mr. W. M. Fawcett was the architect, and Mr. W. Saint the builder.

NEW VICTORIA HALL, HAMPTON HILL, MIDDLESEX.—A new hall has just been erected at Hampton Hill. The builder was Mr. L. Redgrove, and Mr. R. M. Roe was the honorary architect.

PUBLIC BUILDINGS, ABERDARE.—The new buildings for Aberdare Urban District Council have just been opened. Another floor has been added to the old structure. The Surveyor (Mr. Owen Williams) prepared the plans. The contract for the work was taken by Mr. Evan Jones. On the upper story are the Council Chamber, the School Board Committee-room, the School Board clerk and his assistants' offices, and a paper room. The old Board-room on the second story is divided into the Surveyor's office, a private room for the clerk, and a committee room. On this floor, too, are the surveyor's private room, and the clerk's assistants' room. On the ground floor are the collector's and the road foreman's room and pay office.

BUSINESS PREMISES, NORTHAMPTON. — New premises for Mr. T. C. Palmer have just been opened at the corner of Bridge-street and Gold-street, Northampton. The frontage is about 50 ft., and the building consists of three stories. Messrs. Dorman & Son were the architects, and Mr. Daniel Sharman was the builder.

GRAND LYRIC HALL, DUBLIN.—The Grand Lyric Hall, Burgh-quay, is shortly to be opened, the building, formerly a corn store, having been converted into a music hall. The work has been executed by Messrs. Meade & Son, working from the plans of Mr. W. H. Byrne. The verandah was supplied by Mr. M'Loughlin. Seating accommodation is provided for 1,500 people.

BUSINESS PREMISES, HALIFAX.—A block of business premises is about to be erected in Rawson-street, adjoining the Lancashire and Yorkshire Bank, for use as a drapery warehouse by Mr. J. H. Waddington. The architects are Messrs. Jackson & Fox, and contracts have been entered into by the following:—Mason, T. C. Dawson, Lightcliffe; joiner, Fielding & Bottomley, Halifax; plumber, G. Fawley & Son, Halifax; slater, A. Firth, Halifax; ironfounder, James Mackrell, Elland.

RAILWAY STATION BUILDINGS, LISBURN, IRELAND.—New station buildings are being erected at Lisburn. The total length of the buildings will be 142 ft. Mr. David MacHenry, Lisburn, is carrying out the contract. The sub-contractors for the works are Messrs. Manisty, Dundalk; Mr. Bullick, Lisburn; Mr. Knox, Lisburn; and Mr. Adams, Belfast. The buildings were designed by Mr. W. H. Mills, engineer-in-chief of the Great Northern Railway, Dublin, and the works are being carried out under the superintendence of Mr. R. B. Belfrage, C.E., Belfast.

## SANITARY AND ENGINEERING NEWS.

CASTLEFORD MAIN SEWERS.—At the request of the Council, Mr. Malcolm Paterson, C.E., has recently reported on the present condition and working of the main drainage system, including the pump well and tank sewer. After a detailed examination and certain tests his conclusions are (*a*) that the stability of the works, which were constructed from his designs in 1877, is intact in all respects, the work being as good as when it left the contractor's hands; (*b*) that the permanent influx of subsoil water by leakage is insignificant, but that certain open lands are drained direct into the system; (*c*) that flushing of a systematic kind has not been used, although each manhole was designed as a flushing shaft, and that the whole of the main outfall and branch sewers, and parts of other sewers are in urgent need of flushing; (*d*) that the storm water off streets and large yard surfaces should not be taken into the sewers, which were not designed to receive more than the storm water from roofs and small yards, &c. Besides temporary measures, such as cleansing the sewer from the accumulation of solids, Mr. Paterson recommends certain automatic flushing-tanks, self-acting flushes in the tank sewer, storm overflows, revolving screen, &c., at a cost of 1,200*l*. This outlay he considers, with proper management, will render the Castleford drainage system thoroughly efficient. The River Aire at Castleford is only 28 ft. 6 in. above sea level, and the town lies so low as to be subject to surface floods in certain places. Hence the existence of flat gradients and the need of constant flushing. Also the sewerage being pumped 45 ft. renders it essential to keep out the subsoil water and the bulk of the storm water. Since the scheme was carried out, at a cost of about 30,000*l*., Castleford has doubled its population, and is still increasing at a rapid rate.

WATER SUPPLY, WOODBURN, NORTHUMBERLAND.—The Bellingham Rural District Council have instructed Mr. D. Balfour, M.Inst.C.E., Newcastle-on-Tyne, to prepare a scheme of water supply for East and West Woodburn, and also for the drainage of property at Stannersburn.

DRAINAGE WORKS, FRINTON, ESSEX.—Messrs. Parry & Co., contractors, of London, have commenced the works for the extension of the drainage of Frinton. The contract in the first instance is for 4,280*l*., and the construction of the main drain right along the front will involve a considerable amount of tunnelling. Messrs. Beasley & Son, of London, are the engineers for the scheme.

VICTORIA BRIDGE, BRISBANE.—The new Victoria Bridge, Brisbane, which has just been completed, crosses the Brisbane River where it is 1,020 ft. wide. Victoria Bridge was one of several important works destroyed by the great Queensland flood of February, 1893. To keep the traffic going while the new work was in progress a temporary wooden bridge was built in the gap left by the old bridge. The new bridge was built in two longitudinal sections. One half was completed first, and the traffic turned on to it. The part of the temporary bridge it did away with was then removed, and the second half of the new bridge built. The bridge was designed by Mr. A. B. Brady, Government architect and engineer for bridges. It consists of six spans, each 170 ft. in length by 20 ft. height of girders, supported on cylinder piers and masonry abutments. The two roadways are each 24 ft. wide, giving a total width for vehicles of 48 ft. These roadways are carried on the lower booms, and are composed of Lindsay's steel troughing, filled in with concrete, on which is laid hardwood paving-blocks. Two footways, carried on cantilevers, are provided. The ironwork was manufactured by Mr. M'Cormick, South Brisbane. The total dimensions of the bridge are 1,020 ft. in length by 72 ft. in width, including footways. There are 3,481 tons of iron and steel, and 5,200 yards of concrete in it. The work was contracted for and carried out by Mr. John M'Cormick, his price for the work being 93,500*l*. A separate contract was let to Mr. A. Midson for the masonry abutments. It contained 27,658 cubic feet of stone, and the price was 16,300*l*.

DRAINAGE WORKS, ECCLES.—On the 29th ult., Mr. Herbert H. Law, Inspector to the Local Government Board, opened an inquiry at the Town Hall, Eccles, into the application of the Town Council to borrow 4,928*l*. for works of sewerage and storm-water drainage in the borough. The Town Clerk (Mr. G. W. Bailey) explained that the proposed works of sewerage to be constructed in Liverpool-road, and the drains for storm-water, were additional works, and were not to supersede any previous ones. The Council asked for a period of thirty years in which to repay the loans.—The Borough Engineer (Mr. A. C. Turley) explained the nature of the works to be carried out, and said that the whole of the sewage of the borough had to be pumped on to the sewage farm, but as the main outfall sewers at the farm were only capable of taking 3,000 cubic feet of water per minute, and as in times of storm the flow was as large as 10,000 cubic feet, the pumps at the sewage farm were incapable of taking the additional storm-water, which it was not at all desirable should be dealt with on the farm, and there was a backing up of the sewage in the main sewers. The available area for irrigation on the farm was sixty-one acres. Arrangements had been made with Mr. Hunter, Engineer to the Ship Canal, to turn the storm-water direct into the waterway. It is proposed to construct nine storm outlets. There was no opposition to the works.

FOLKESTONE WATER SUPPLY.—The Folkestone Town Council have adopted the following recommendation of the whole authority in committee:—"That, the Folkestone Waterworks Company having failed, and not being able and willing to supply water proper and sufficient for all reasonable purposes for which it is required by the Council acting as the Local Authority, the Council be recommended to provide their district, at a cost not exceeding 100,000*l*., with a constant or other supply of water proper and sufficient for public and private purposes, and that the necessary steps be taken incident or in relation thereto."—*Kentish Observer.*

EXTENSION OF GLASGOW SEWAGE PURIFICATION WORKS.—An extension of the Glasgow Sewage Purification Works was inaugurated recently by Lord Provost Richmond. The works, which are situated at Dalmarnock, in the east end of the city, were opened in May, 1894, and have consequently been nearly three years and a half in operation. Since then additional sewers have been connected with the works, bringing the aggregate daily inflow up to about ten million gallons. To cope with the treatment of this greatly increased volume of sewage, extensions were entered upon last March at an estimated cost of about 11,000*l*. The extensions consist of eighteen precipitation tanks, built of brick with concrete floors, each 100 ft. by 40 ft., with a water-holding depth of 7 ft. The extensions were designed by Mr. A. B. M'Donald, the City Engineer, on the lines of the scheme originally carried out by the late Mr. Alsing, the first Engineer of the works, but with improvements which had suggested themselves in the course of three years' working; and they bring up the total storage capacity from two to five million gallons.

NEW LINE BETWEEN MIRFIELD AND LEEDS.—The London and North-Western Railway Company is now carrying out an extension in the West Riding, and the engineers hope to see the work completed before the end of next year. The services between Liverpool, Manchester, Huddersfield, and Leeds have for a long time been hampered and delayed because the company has only a double set of lines between Mirfield and Wortley, Leeds. Four sets of lines are now being provided on this section, but instead of the additional lines being laid alongside the old track, a detour is being made so as to embrace Heckmondwike, Liversedge, Cleckheaton, Birstall, and Gildersome. The new line, although only a comparatively short one (thirteen and a half miles long), is estimated to cost, including the price of the land, close upon one million sterling. After branching off from the present London and North-Western line at Colne Bridge, near Bradley Station, the new line goes by a sharp decline underneath the Lancashire and Yorkshire Railway at Heaton Lodge, and then crosses the River Calder by means of a very large steel girder bridge, into Mirfield, where a new station is being erected at Battyford, on the top side of the town. After leaving Battyford, the line makes a considerable detour, so as to embrace Heckmondwike, Liversedge, Cleckheaton, Gomersal, Birstall, and Gildersome. It crosses the Elland and Dewsbury road by a viaduct 198 yards long, the rail level being 60 ft. above that of the valley; and then, after passing over another viaduct 200 yards long, it enters a heavy cutting through the hill on which Mirfield Church stands. In passing through the Spen Valley some heavy bridge and other masonry work has been found necessary. There will be a station at High-street, Heckmondwike, and after passing this station, the line passes under the Huddersfield and Leeds road near Liversedge, and skirts the slope of the hill till Spen Bank is reached. A tunnel 800 yards long has been made through Gomersal Hill, and another tunnel 2,200 yards long has been cut through the Gildersome and Morley range of hills. The work of constructing the new railway has been let in three contracts, to Messrs. J. Wilson & Sons, of Huddersfield; Messrs. Monk & Newell, of Liverpool; and Messrs. Baldry & Yerborough, of Westminster. Messrs. Wilson & Son, who were entrusted with the work between Heaton Lodge (Mirfield) and Northorpe, have now completed their contract, with the exception of the station buildings at Mirfield and Northorpe, and these buildings are now in course of erection. Messrs. Baldry & Yerborough are carrying out the construction of the line between Gomersal and Wortley. The other part of the work—carrying the line from Northorpe, through Heckmondwike, Liversidge, and Cleckheaton, where stations will be built—was not let to Messrs. Monk & Newell until a more recent date, and it is possible that this section will be the last to be completed. The different contracts are being carried out under the supervision of Mr. L. Trench, Mr. A. A. Macgregor, resident engineers, and their assistants, Mr. R. C. Bullough and Mr. Prebble.—*Leeds Mercury.*

## ELECTRIC LIGHTING NEWS.

ELECTRIC LIGHTING, MARYLEBONE.—At a recent meeting of the Marylebone Vestry it was unanimously decided, on the motion of the Chairman of the Electric Light Committee, Mr. Brooke-Hitching, to give formal intimation to the Board of Trade and the Metropolitan Supply Company, Limited, of the Vestry's intention to apply for a provisional order for supplying electric energy for public and private purposes in the parish of Marylebone.

LIGHTING OF ABERDEEN HARBOUR.—Aberdeen Harbour Commissioners have resolved that the quays and public sheds at the Upper Dock, Victoria Dock, and Graving Dock be lighted by electricity, and that electric beacons be placed at the entrance to the docks.

## STAINED GLASS AND DECORATION.

CHANCEL SCREEN, &C., CHRIST CHURCH, WEST GREEN, TOTTENHAM.—The Bishop of London dedicated recently the wrought iron chancel screen, stained east window, and lectern, which have just been placed in Christ Church, West Green. The window, which has been designed and executed by Messrs. Jones & Willis, of London, has five lights. The screen also was designed and is being executed by Messrs. Jones & Willis. It is in the early Gothic style, and is of light wrought iron work, decorated in black and gold. A figure of Christ is in the centre. Figures of the apostles flank the central portion of the design, two on either side. The whole is surmounted by a cross in open ironwork.

JUBILEE MEMORIAL WINDOW, HARLESTONE, NORTHAMPTON.—As a memorial of her Majesty's Diamond Jubilee, the inhabitants of Harlestone have erected an east window in the Parish Church of St. Andrew. The window is the work of Messrs. Burlison & Grylls, of London.

WINDOW, ST. NICHOLAS CHURCH, BRIGHTON.—A new window was dedicated in this church recently in memory of Dr. Durnford, as well as a screen of carved oak for the tower arch, in commemoration of the Diamond Jubilee. The window, which is in the west wall of the tower, and represents St. Augustine and St. Richard of Chichester, is by Mr. C. E. Kempe.

NEW WINDOW, DOWNHAM MARKET CHURCH.—Another Munich stained-glass window has just been

added to the many already put up in the Parish Church of Downham Market. The present one contains three lights, and illustrates the text, "Mary hath chosen that good part which shall not be taken away from her." The window is by Messrs. Mayer & Co.

## FOREIGN.

FRANCE.—In the civil chamber of the Cour de Cassation in the Palais de Justice, at Paris, which already contains a fine ceiling by Paul Baudry, two large paintings by M. Jules Lefebvre have just been placed, "La Justice Punissant le Crime," and "La Vérité se Dégageant de la Justice." This last includes four noticeable figures — Justinian, Charlemagne, Saint Louis, and Napoleon I. —— The Municipal Council of Paris have recently decided upon the partial demolition of the St. Germain market. On the site thus obtained a large building, the plans of which have been prepared by M. Dupré, is to be erected.——At the École des Beaux-Arts there is to be an exhibition of the works which obtained the Prix de Rome at the 1897 competition.——It seems that there are the remains of a Temple of Diana at Aix-les-Bains; the local archæologists are anxious to undertake its restoration.—— M. Liberge has been elected President of the "Société des Architectes de Nantes" for 1898.—— The annual exhibition of M. Lachenal's céramiques is announced as being held in the Georges Petit Gallery.——Large barracks for infantry and cavalry, a club for officers and a military prison, are all to be erected very shortly at Montpellier. The expense is estimated at 2,945,000 francs. —— M. Courtry, engraver, who had a paralytic stroke last June, has just died at the age of forty-nine. He was born in Paris and was a pupil of his father. He received medals at the 1868, 1874, and 1875 Salons, and at the Exhibition of 1889. He received the Legion of Honour in 1881, and carried off the medal of honour for engraving in 1887. Among his principal works we may mention the "Deux Foscari," after Delacroix; the "Condamné à Mort," after Munkacsy, the "Mort de Marceau," after J. P. Laurens, the "Femme et les Enfants de Holbein," from the celebrated picture in the Bâle Museum, the "Famille du Menuisier," after Rembrandt, the "Portrait de Gervatius," after Van Dyck, &c. M. Courtry also illustrated several books, especially the national edition of the works of Victor Hugo.——The death is announced, at the age of forty-four years, of M. Léon Nouveau, architect, of Cannes. He was a pupil of the École des Beaux-Arts of Lyons, and of M. Echernier. He carried out, in collaboration with M. Rogniat, the Hôtel Continental at Cannes, as well as the Winslow Villa, that of Lady Vincent in the same town, and that of the Baroness Rothschild at Grasse. M. Nouveau had been, since 1889 a member of the Société Centrale des Architectes.

GERMANY.—Among the memorials to the late Emperor William unveiled during the past month was an excellent equestrian statue at Karlsruhe, which was unveiled with considerable ceremony. The sculptor is Professor Adolf Heer, of Karlsruhe; the cost was about 11,000*l*. The statue is in bronze, and stands on a high pedestal.——Of minor but very effective monuments recently completed, there is also the Emperor William monument at Norderney, which is being erected from the design of Professor Wallot, of Dresden, and takes the form of an obelisk.——There have been various alterations in the conditions under which students of architecture, engineering, and other technical professions can obtain studentships from the German Government, and it appears that henceforth candidates are required to have attended at least for one year the courses of a technical college. At Berlin there will be now fourteen National and eighteen Government studentships, and there will also be a number of others at the disposal of the Technical Colleges of Aix-la-Chapelle and Hanover.—— Our contemporary, *Blatter Für Architektur*, has just issued some excellent photographs of Bruehl Castle on the Rhine. This interesting building is generally overlooked by the tourist who passes Cologne, and also by many architects. It would be well to again call attention to this building, which dates from about 1750. The same journal in its October number reproduced some particularly good photographs of Milan Cathedral, details of which are generally so difficult to obtain from the local photographers.

PEKIN.—Plans for the proposed International Institute at Pekin have been prepared in Shanghai by the joint architects, Messrs. Morrison & Gratton, and John Smedley. It is intended to place something before the Chinese that will break down old prejudices, and is especially meant to reach the official and upper classes. The institute is to take the form of a lecture hall, museum, library, with rooms for the exhibition of working machinery and the products of Western skill and civilisation.—*St. James's Budget.*

STEEL PULLEY WHEELS.—The Westminster Manufacturing Company send us description and illustrations of their patent "All Steel" sash-pulley and wheel, with wrought steel cheeks and steel axle. The wheel is of polished brass; the whole appears to make an exceedingly good and reliable pulley-wheel.

## MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—The Imperial Stone Company, Limited, East Greenwich, have opened City offices and show-rooms at 4 and 5, Aldgate-street, E.C.——Messrs. H. Binko & Co., electric telegraph and light engineers, have combined their own business with that of Messrs. Ridsdale & Co., as the firm of Binko, Ridsdale, & Co., under which style the business will be carried on at 34, Leadenhall-street and 54 and 120, Minories, E.

ARCHÆOLOGICAL DISCOVERY NEAR RUTHIN.—In the course of the past summer, in consequence of a careful sifting of certain traditions found among the residents on the Ruthin side of the Hiræthog Mountains, Mr. R. O. Jones, of Ruthin, has carried out a search over this almost uninhabited region for archæological remains, and has succeeded in finding nine stone circles that were hitherto unknown. Some of the circles are perfect and some imperfect, the latter having probably been deprived of stone for building purposes. The outside of each circle is composed of large stones, and in those circles that have not been tampered with the other stones are twelve in number. The diameter of the circles ranges from 18 ft. to 48 ft. Mr. Jones has been in communication with Professor Rhys, of Oxford, who holds that the remains are far more ancient than the Ogam inscribed stone found in the same region, and now at Pool Park, Ruthin.—*Denbigh Free Press.*

VENTILATION AND WARMING.—Mr. W. H. Casmey delivered a lecture before the members of the Yorkshire College Engineering Society, on the 1st inst., on "Warming and Ventilation." He said that wherever a number of people were gathered together in a building there should be a constant flow of fresh air. There was reason to believe that the time would come when every building throughout the kingdom would have a mechanical method of warming and ventilation. A consideration of the facts on record led him to form the opinion that the contagiousness and the non-contagiousness of pulmonary consumption varied in direct ratio to the amount of air space and of free ventilation of air in the dwellings of the people. Previous to the Army Sanitary Commission, nearly forty years ago, the cubic space per soldier in the barracks of the Foot Guards was 331 cubic feet, and the mortality from lung disease was nearly 14 per 1,000. In the Horse Guards, on the other hand, with now space per man equal to 572 cubic feet, the death rate was 7 per 1,000 from the same disease. The air space had been increased to 600 cubic feet per man, and the death rate from lung disease was 3 per 1,000. In ventilating a building care must be taken that the air introduced was properly warmed. It was impossible to either study or work to the best advantage in a low temperature, the reason being that the corporeal heat or energy, instead of being devoted to its work, was taken away by the cold. Schools, mills, and works should be properly warmed before the scholars or workpeople were allowed to enter them. If this were done a very short time would prove that the step taken was a right one. Mr. Casmey proceeded to describe the installation recently applied by the Blackman Ventilating Company to the Royal Technical Institute at Peel Park, Salford. He also dealt at length with the subject of the ventilation of industrial buildings, more especially in the cotton and woollen trades, and urged that in the engineering works there was great need of mechanical ventilation. He contended that warming and ventilation played a most important part in the health of our workers. Fresh air was the means by which we lived, and it should be given without restriction. Whether the people were in banks, theatres, mills, engineering works, or coal mines, they could and should be supplied with this life-giving element. Once its true value was understood, many of the diseases common to-day would die out, and the pale, wan faces, of which they saw such a number in mills and factories, would assume the bloom of health natural to them.

NEW BUILDING BY-LAWS FOR LEEDS.—The Building Clauses Committee of the Leeds Corporation are engaged in revising the building regulations for the city. A draft, numbering 117 by-laws, has been prepared, and copies sent to the Leeds Master Builders' Association and the Leeds and Yorkshire Architectural Society, in order that those bodies may review the list, and make what suggestions they think proper. Many of the old bye laws have been retained, a considerable number have been materially modified, and there are some new regulations. With regard to the laying out of new streets, hitherto the minimum width has been 36 ft. Now it is proposed that main thoroughfares shall not be less than 42 ft. There is a proviso, however, that a street may be 36 ft., on condition that at each side there is an area of 6 ft., making 48 ft. from house front to house front. A new by-law stipulates that in the case of dwelling-houses to be erected in damp situations there shall be a layer of concrete 6 in. thick or a covering of asphalt. Another provision of a like character is to the effect that in every new building a damp course shall be inserted at a height of not less than 3 in. above the surface of the ground. In order to restrict the use of old bricks in the erection of new dwellings, it is provided that no such material shall form part of an external wall or of an internal half-brick wall, but that good old whole bricks shall be allowed in an internal 9-in. wall on condition that "not more than two-thirds of the same are mixed with one-third of new bricks." Special regulations are introduced with reference to the quality of other materials. For example, mortar must consist of good lime and sand, in the proportion of one-third lime and two-thirds sand. There are likewise provisions as to the strength of timbers supporting roofs, floor joists, beams, and girders, both in the case of dwelling-houses and business premises. The necessity of providing ventilation, not only in dwellings, but also in places of entertainment and places of worship, has received attention, and further effort has been made to secure efficient sewerage and to provide for the ventilation of drains. The Architectural Society, whilst cordially approving of many of the provisions, have suggested the alteration of a number. We understand that surprise is expressed by some who have perused the draft that no alterations are proposed with regard to the thickness of party walls in business premises. At present such walls have to be of the same thickness as the external walls, and it is suggested that they should not be more than two-thirds as thick. This and other points, however, will no doubt be carefully considered.—*Leeds Mercury.*

PROFESSOR BALDWIN BROWN ON ITALIAN ART.—On the 2nd inst. Professor Baldwin Brown delivered in the hall of Free St. Andrew's Church, Drumsheugh-gardens, the first of a course of twenty lectures on Italian art, arranged for by the Committee of the Edinburgh Social Union. Italian sculpture and painting, the lecturer said, were one phase of the art that from its subjects and tone had been called Christian. The expression of Christian ideas in art varied from age to age. In the earliest mosaic designs these ideas were treated with reserve, while in the Middle Ages that reserve gave place to an over-insistence on theological doctrines, and to an almost morbid delight in depicting the sufferings of saints or the terrors of the world to come. The didactic element in art became in this way too prominent. In the present day it was often denied that art could exercise any legitimate ethical influence. There was a certain truth in that doctrine, but in the crude form it took sometimes it was belied by the whole history of the arts. Sculpture and painting could, however, most effectively exercise their ethical influence by presenting pure and elevated types and actions that might be left to work an ennobling influence on the spectator. This truth was recognised in the later Middle Ages, though it was not the Italians who first discerned it, but the French. The sculpture on the French Gothic Cathedrals presented types of purity and sweetness and heroism, and the work was all pervaded with a fine sense of beauty. In many of the qualities most admirable in the works of the early Italians they had been preceded by the sculptors of Northern France nearly a century earlier. If we asked the reason why the Italians, beginning later, advanced so much further in art than the French, the answer would be found in the development among the former of individual genius. Without the action and reaction on each other of strong and original personalities, sculpture and painting never advanced to their highest forms. In Italy the circumstances of the time favoured the development of the individual of genius. The life of the Italian cities was stimulating and called forth the powers, while there was every encouragement for those powers to expend themselves in one form or another of artistic activity. A sketch of the political and social life of the Italian cities, with limelight illustrations of their characteristic features and monuments, concluded the lecture.—*Scotsman.*

NEW BOARD SCHOOLS, LONDON.—The School Board for London have just drawn up their annual list of fresh sites for the provision of additional public elementary schools in their district. The total of scheduled sites amounts to thirty, but since some of them are "alternative sites," the actual number to be taken is twenty-five, which cover an aggregate area, calculated upon the mean of each set of coupled sites, of $20\frac{7}{10}$ acres. The proposed sites are distributed in the various electoral divisions as follows:—Chelsea—three (alternative), consisting of twelve houses in Walton-street, nineteen in Denyer, Rawlings, and Wood-streets, and nineteen in Hasker and Ovington-streets. Finsbury—two (alternative), being ten houses in Buckingham-street, and gardens and premises behind Nos. 7-8, Barnsbury Park, abutting on Offord-road, Islington. Greenwich—some market garden and vacant land by Tunnel Approach-road, and land in Horn-lane; two sites. Lands in Bradgate-road, in Woolstone-road, and adjoining Ladywell recreation ground, Lewisham; three sites. Land in Wickham-lane, Plumstead, and Parson's Hill Chapel, Woolwich; two sites. Hackney—two (alternative) sites, consisting of nineteen houses, with forecourts, yards, &c., in Bradstock, Cassland, and Brampton roads, and eighteen similar premises in Brampton and Bradstock-roads. East Lambeth—ten houses and gardens in Cuthill-road and Love-walk, seven in Asylum-road,* two in Peckham-road,* Camberwell, and No. 64, Grosvenor-terrace, Camberwell Gate,*; four sites. West Lambeth—two (alternative), being land in Bonneville-road, and an area of about 137,570 square feet

* For enlargement of existing Board School premises.

in Deauville-road, Clapham; a vacant plot on the western side of Altenburg-gardens, Clapham; and three parcels of ground in Broomhill-road, Wandsworth, at Totterdown, Tooting, and in Tennyson-street.* Battersea. Marylebone—two houses and gardens in Rhyl-street, St. Pancras.* Southwark—the block of ten houses, yards, mission-hall, stabling, &c., bounded by Parliament-street, Butcher-row, and Dantzic-street, the site of Parliament-street, with seven houses therein, and the roadway leading from that street to St. George's Market, in St. George's Parish; one site. Tower Hamlets—No. 208, Cable-street,* eight houses and land in Batty's-gardens and Berner-street, sixteen premises in Rutland-street* and Newark-street, Mile End Old Town, and three houses, with forecourts, &c., in Upper North-street, Poplar; four sites. The average area of the thirty sites is 36,582 square feet.

BUILDING CONSTRUCTION.—A meeting of the Glasgow Master Wrights Association was held recently at the Building Trades Exchange, when Mr. Peter Fyfe, Chief Sanitary Inspector, Glasgow, delivered an address on "Building Construction in Relation to the Public Health." There were two main principles in building construction on which all were agreed—that every structure intended to be occupied permanently by human beings ought to be as healthy as it was possible to make it, and that every such structure should, as far as practicable, be able to resist the destructive influence of fire. There was a third canon which lay on the surface, but, unfortunately, it could only be observed truly in the higher class structures: that every building and house should be so arranged as to permit of the tenants thereof living in comfort. A healthy house must be dry in every part, must be able to be thoroughly cleansed throughout, and should leave no facilities within the four walls for the harbouring of infective or other dust. He had seen many substantial-looking walls saturated with moisture, particularly in new buildings. In such cases, and in the case of old walls which damp had entered, the services of the joiner were, he regretted, too often employed to disguise the sore and not to heal it. Again and again in that city he had come across soaking walls covered 3 ft., 4 ft., or 6 ft. high with wood lining by joiners, at the instance of proprietors. He thought that was most objectionable—in fact, just as heinous a sanitary sin on the part of both as was the hidden unjointed or badly jointed drain of the mason or plumber. No joiner should obey such an order or perform such a piece of nefarious work. The wetness of such walls should be cured, not covered up. Lulled by the apparent dryness of the wood lining, ignorant tenants took basement or ground floor houses, little reckoning what it covered, little knowing the abominations, animal and vegetable, which lurked behind, not dreaming that the catarrhs, rheums, bronchial affections, and respiratory troubles generally, nay, even diphtheria, might be caused by living and sleeping within such wood-lined habitations. He trusted that some day work of that kind would be punishable by law. In even the best kept houses he felt sure the tenants would be astonished to see what they were dwelling above, if necessity occasioned the lifting of the flooring boards. In houses inhabited by the humbler classes in the city he had witnessed again and again the dreadful mass of festering miscellaneous filth bred by the present insanitary method of floor-making.

RESTORATION OF LONGFORD CHURCHYARD CROSS, DERBYSHIRE.—This work has just been carried out under the direction of Messrs. Naylor & Sale, architects, Derby. Messrs. Harry Hems & Sons, of Exeter, carried out the work.

GLASGOW BUILDING EXCHANGE.—The annual meeting of the members of the Building Exchange was held on the 29th ult. at the offices, 30, Gordon-street. Sir Wm. Arrol presided. The report, which was submitted by the secretary, Mr. David Cook, showed that for the year ending September 30 the income amounted to 850*l.* 6s. 10d. and the expenditure to 668*l.* 8s. 7d. The executive resolved to recommend that a dividend of 5 per cent. be declared on paid-up capital. In view of the recognised fact that the by-laws under the Glasgow Building Regulations Act, 1892, are in many cases ambiguous and harassing, the executive, first by deputation and again by memorial, approached the Corporation with a view to obtaining a revision of these by-laws, and although they were not immediately successful, they believed that they succeeded in bringing forcibly under the Corporation's notice the more glaring defects in the regulations, and that their efforts will not be without effect in the near future. The report was adopted on the motion of the chairman, seconded by Mr. John Paterson. A vote of thanks to the chairman brought the proceedings to a close.

LYCH GATE, HOOTON PAGNELL CHURCHYARD, YORKSHIRE.—The new lych gate at Hooton Pagnell Churchyard has been erected under the direction of Mr. E. Bernard Wilson, architect to the Frickley Estate, and is constructed of English oak resting upon dwarf walls of local masonry, and covered in by red tiles. The ridge is surmounted by a metal cross. The floor beneath the lych gate is flagged with stone. The work has been carried out by Messrs. Harry Hems & Sons, of Exeter.

STREET IMPROVEMENTS, CARDIFF.—Mr. W. O. E. Meade-King, C.E., one of the inspectors of the Local Government Board, held an inquiry at the Town Hall, Cardiff, recently, into the application of the Cardiff Corporation for sanction to borrow 45,510*l.* for works of street improvements; 3,410*l.* for the purchase of land as a site for the erection of common lodging-houses, and 850*l.* for the provision of a depot in Railway-street. Alderman Daniel Lewis said that of the 45,510*l.* now asked for, it was proposed to spend 32,000*l.* in paving Newport-road (from Queen-street to Clifton-street), The Hayes, Working-street, Cowbridge-road, and Castle-street (from Market-road to Duke-street), with Australian hard wood blocks, and Trinity-street, Wharton-street, and Victoria-place with compound asphalt; and 9,000*l.* was required for paving the footways of the streets named. Another sum of 4,410*l.* was required for paving Bute-street and Custom House-street with wood blocks instead of granite setts, as originally intended. Mr. W. Harpur, Borough Engineer, gave evidence in support. Macadamised roads were no longer capable of standing the severe traffic of the district, especially during the winter months, when the streets became practically a sea of mud. The inspector subsequently inspected the streets and premises in respect of which the applications were made.

"FIRST PRINCIPLES OF ELECTRICITY AND MAGNETISM."—In noticing this book last week we said that "Footnotes sometimes contradict the text." The author writes that this cannot be true, as there is only one footnote in the book. There are in fact two, but there is only one to which the remark could refer; and the expression was so far inaccurate; it should have been in the singular and not in the plural.

SOCIETY OF ARTS.—The Society of Arts will commence its session (the 144th from its foundation in 1754) on the 17th inst. with an address on "The Colonies: their Arts, Manufactures, and Commerce," by Major-General Sir Owen Tudor Burne, G.C.I.E., K.C.S.I., the Chairman of the Society's Council. There will be four meetings on successive Wednesdays before Christmas, at which papers will be read by Professor James Douglas, on "The Progress of Metallurgy and Metal Mining in America during the last Half Century;" by Professor Leonard Waldo, D.Sc., on "The American Bicycle—the Theory and Practice of its Making;" by Bennett H. Brough, on "The Stockholm Exhibition of 1897;" by Samuel Rideal, D.Sc., on "The Purification of Sewage by Bacteria." The first course of Cantor lectures will consist of three lectures, to be given on Monday evenings, commencing on the 29th inst., by Dr. Eugene F. A. Obach, F.C.S., on "Gutta Percha."

THE CITY LUNATIC ASYLUM.—The Visiting Committee of the City of London Lunatic Asylum recently submitted to the Corporation plans for proposed improvements to the asylum building at Stone, near Dartford, at a cost of 46,770*l.*, and these plans were adopted. The Visiting Justices afterwards invited tenders for the work from eighteen well-known firms of builders. Three declined, and the remaining fifteen sent in tenders ranging from 59,000*l.* to upwards of 80,000*l.* Those tenders were for the erection of the fabric of the building only, and did not include any machinery, internal fittings, or furnishing. The Visiting Justices consider that a further sum of 10,000*l.* beyond the amount of the lowest tender will have to be expended on those items and on certain works which have recently become necessary. A very considerable increase has taken place in the price of builders' materials, more particularly in the price of bricks, and owing to the disturbed state of the engineering trade difficulty has been experienced on the part of the firms tendering in obtaining quotations for the ironwork required. Those causes have largely tended to increase the estimate originally formed, and as it is considered of the utmost importance that the works should be at once proceeded with, the Visiting Justices are seeking to obtain an increase of the grant from the Corporation to 70,000*l.* instead of 46,770*l.*—*Times*.

PROPOSED MANX NATIONAL MUSEUM.—A deputation waited upon Lord Henniker, Governor of the Isle of Man, on the 8th inst., with reference to providing a Manx National Museum. The Monuments Trustees recommended that a museum should be built at a cost of 3,000*l.*, and maintained out of revenue. His Excellency said that, while willing to recommend a substantial sum towards the building, he thought the municipal authorities should pay part, and defray the annual charge. It was stated that many valuable antiquities were being taken from the island. The proposition will now come before the ratepayers.

## CAPITAL AND LABOUR.

LEEDS BUILDING TRADE.—An official intimation has been given to the Leeds Master Builders' Association on behalf of the Masons' and Joiners' Unions in Leeds that the men have resolved to ask for an increase in the present rate of wages. In accordance with the arrangement which has for some time existed between employers and workmen in the building trade, six months' notice is required on either side of any proposed alteration in the existing conditions of working, so that the notice in question will not, in any event, take effect until May next. The joiners and masons are paid at present at the rate of 8½d. per hour, which is a halfpenny an hour less than is received by the bricklayers, whose wages were increased to 9d. after the prolonged dispute of over a year ago. The claim of the latter, however, was regarded by the employers as differing somewhat from any that might be put forward on behalf of the other branches of the building trade, it being recognised that the bricklayers had more frequently to follow their occupation exposed to bad weather than either the joiners or masons, who often worked under cover. The number of men concerned in the proposal is calculated at about 1,000, of whom about 600 are masons.—*Leeds Daily News*.

STONEMASONS' WAGES, NORTHWICH.—On the 1st inst., the Northwich and District Branch of the Co-operative Society of Stonemasons gave the usual trade union notice to their employers of a demand for an increase of 1½d. per hour in the rate of wages. The men now receive 7½d.

THE STAFFORDSHIRE BUILDING TRADES.—The building trade in the Potteries continues in a flourishing condition for the time of the year. Bricklayers are well employed, with 1 per cent. out of work. Joiners and carpenters are moderately busy. Plumbers and painters for the time of the year are working well. At Leek business is moderate in all branches. At Crewe all branches are busy. At Stafford business is good. There is a moderate demand for both plasterers and stonemasons. Joiners are fully employed, and bricklayers have a small percentage out of work.—*Staffordshire Sentinel*.

BOLTON PAINTERS AND THEIR WAGES.—The Bolton operative painters have sent in a demand, it is stated, for an advance in their wages from 8d. to 9d. per hour. They also ask for a reduction of hours in order that they may commence operations at seven in the morning instead of six as heretofore.

WINSFORD BRICKLAYERS AND THEIR WAGES.—The Winsford and District Branch of the Operative Bricklayers' Society have given notice to their employers of a demand for an increase of 1½d. per hour. At present the men only receive 6½d., which they claim is 2d. per hour less than the average of other towns. The Northwich, Altrincham, and other bricklayers receive 8d. to 9d., while in Manchester and suburbs the prices range from 9d. to 10d.—*Liverpool Mercury*.

PLYMOUTH AND DISTRICT PLUMBERS.—The master plumbers of Plymouth and district have avoided a strike by granting their operatives an advance of a penny an hour in their wages. The new by-laws of the Operatives' Association provide that from March to October, inclusive, the hours of labour shall be fifty-three per week, and from November to February, inclusive, forty-seven, the week to finish at noon on Saturday, and the minimum rate of wages to be 8d. per hour. The first two hours' overtime are to be at the ordinary rate, then on to midnight to be counted as time and half, and from midnight to starting next morning double time; from noon on Saturday to six o'clock time and half, and after that double time; and Sundays, Christmas-days, and Good Fridays to count as double time. When any member has to work three miles from the boundary of the Three Towns for the entire day he is to be paid an additional penny per hour, walking time to be allowed at the rate of three miles an hour. Any employed member jobbing at his trade systematically after the ordinary hours subjects himself to a fine according to the decision of the committee. No apprentices are to be taken under the age of fourteen or over sixteen years; no apprentice to serve for a shorter period than five years, so that his indentures shall not expire before the age of twenty-one. An annual conference is to be held in the first week of November in each year, and labour is not to be withdrawn from any shop without a conference between the Masters' and Operatives' Associations. In the event of a dispute or grievance in any shop which cannot be settled by the employers and workmen provision is made for the dispute to be settled by the Executive Committee on each side. Six months' notice in writing must be given of any alterations in the by-laws, and should employers and operatives be unable to come to an understanding a court of arbitration, with an umpire, may be formed to decide the matter in dispute.—*Western Morning News*.

THE PORTSMOUTH BUILDING TRADE.—The members of the Portsmouth Branch of the Amalgamated Society of House Decorators and Painters have made an application to the Employers' Committee for an increase of wages, from 6½d. to 7d. an hour. They also propose the establishment of a Conciliation Board.——A meeting of the Portsmouth Master Builders' Association was held on Tuesday evening at the "Sussex Hotel," when communications were received from the Bricklayers, Plasterers, and Painters' Societies giving six months' notice of demands for fresh concessions in the matter of work and wages. The plasterers, who are now getting 8d. an hour, applied for an increase of 1d. per hour, and a reduction in the number of hours of labour. The bricklayers will ask 1d. per hour increase, to bring their wages from 8d. to 9d. an hour, and an alteration in the rules. The painters will demand the raising of wages from 6½d. to 7d. per hour, and an alteration in their working rules to allow of the formation of a Conciliation Board. The notices will not expire until May 1, 1898, and no decision was made by the master builders, the matter being left in the hands of the committee to deal with. At present we understand the employers do not seem inclined to grant the demands of the workmen.—*Hampshire Telegraph*.

* For enlargement of existing Board School premises.

BRICKLAYERS' WAGES, NEWPORT, ISLE OF WIGHT.—The members of the Newport Branch of the Bricklayers' Society, between forty and fifty in number, have resolved to apply to their employers for increased pay of 1d. an hour. The present local rate of pay is stated to be 6d. per hour.

## LEGAL.

### THE BUILDING OF THE EAST GRINSTEAD ISOLATION HOSPITALS.

IN the Lord Mayor's Court recently, before the Recorder (Sir Charles Hall), an action was tried in which Messrs. Geary, Walker & Co., of Queen Victoria-street, London, sought to recover from Mr. Henry Young, builder, of East Grinstead, the balance of a debt incurred in connexion with the wood-block flooring at the Isolation Hospital being erected by Mr. Young for the East Grinstead Urban Council. Mr. Glynn appeared for the plaintiffs and Mr. Hodges (instructed by Messrs. Hastie, Hughes & Dayrell) for the defendant.

Mr. Glynn, in opening the case to the jury, said the original claim was for 81*l.* 1s. 11d. for 295 superficial yards of wood block flooring laid down at the East Grinstead Isolation Hospital. Two sums had been paid on account, leaving 15*l.* 1s. 11d. now sued for. The defendant claimed to be entitled to a deduction of 5 per cent. from the full amount in accordance with the terms of the order, but the plaintiffs contended he was only to be allowed this for a cash payment and as he had not yet paid he was not entitled to any discount. The work was done in June and the account was rendered on July 28. The defendant claimed that he was not liable to pay until the architect had approved of the work and such approval had not been expressed when the action was commenced. When the order was originally given the plaintiffs wrote to Mr. Young on May 6 suggesting the form of an official order and it was accordingly sent the following day in these terms:—"Please proceed at once with 2 in. deal flooring at 5s. 3d. per yard, less 5 per cent., the same to be laid to the satisfaction of the architect." Accordingly the work was done and the bill sent in, but the defendant never did anything to secure the passing of the work by the architect and the plaintiffs contended that the architect's doing so was not a condition of the contract. The defendant should have paid the money and then, if the architect expressed disapproval of the work, he should have brought an action against the plaintiffs to recover the money he had paid. Otherwise the defendant might never have taken the trouble to get the architect to come and look at the work. As to the claim for 5 per cent. discount, it was simply ridiculous, and was so explained in the letters.

Mr. Hodges: The work was to be done to the satisfaction of the architect, and as soon as he was satisfied we were ready to pay. We have always said so.

The Recorder: Then the question is whether you called in the architect within a proper time.

Mr. Glynn said it had never been suggested until now that that was a condition precedent to the paying. On August 6 the plaintiffs wrote to Mr. Young, "Our contract is with you and not with the architect."

The Recorder: When was the work completed?

Mr. Glynn said he believed it was finished by July 6. Mr. Young answered the last letter by saying, "I am surprised at your action, as you undertook to do the work to the satisfaction of Mr. Gale, and as soon as his certificate is forthcoming I am prepared to pay."

The Recorder: Has there been any suggestion in all these letters that a discount of 5 per cent. was expected?

Mr. Hodges: We adhered to it all through, but did not mention it in every letter.

The Recorder said he must decide that both the cash payment and the architect's approval should be within a reasonable period. The defendant was not liable to pay until the certificate was given, if it were given within a reasonable time, and he was then entitled to deduct his cash discount if he paid within a reasonable time.

Mr. Glynn: Your Lordship will give me leave to appeal on that point?

The Recorder: No, certainly I shan't.

Mr. Glynn: My clients are desirous of getting an opinion from the Divisional Court, as a large number of contracts are similar to this and it is a most important point.

The Recorder: I can't give leave to appeal in a case in which I entertain no doubt whatever. It would be a farce to send a case to the Divisional Court on a document which, to my mind, is absolutely clear. I don't believe there has ever been a doubt expressed by any Judge on a similar point. Clients may think the point very important to them, but it does not follow that it is an important point in general law.

Mr. Glynn: There remains, then, the question whether the certificate was given within a reasonable time, and there is the point with regard to the 5 per cent.

The Recorder: The latter point holds good with the other, having held, as I do, that the work must be done to the satisfaction of the architect. Defendant seems to have taken ordinary means to get the architect there. He could not be expected to go down the very next day, for architects have other works to see to generally.

Mr. Glynn: You say then that two months is a reasonable time.

The Recorder: Yes, I say that.

Mr. Glynn: I must take the opinion of the jury on the question of reasonable time.

Mr. Hodges: We have no control over the architect. If the architect won't certify we cannot compel him to.

The Recorder: Suppose he withheld his certificate for ten years, do you say you would not have to pay until then?

Mr. Hodges: Certainly I do, and I will give you authority.

The Recorder, having read the case handed up to him, said it clearly took away from the plaintiffs all right to argue as to reasonable time. The defendant was not bound to pay until the architect was satisfied at the way in which the work had been done. He could not construe the order or the law in any other way without doing damage to the ordinary meaning of the English language.

Mr. Glynn: Will you give me leave to appeal?

The Recorder: Certainly not; the whole thing is as plain as a pikestaff. There will be a verdict for the defendant, with costs.

### A SHIPLEY ANCIENT LIGHTS CASE.

THE case of Hall *v.* Ogden came before Mr. Justice Kekewich in the Chancery Division on the 5th and 6th inst., it being an action brought by the plaintiff as the owner in fee of a dwelling-house and shop and other premises situated in Leeds-road, Windhill, Shipley, to restrain the defendant from building in such a manner as to obstruct the plaintiff's ancient lights.

Mr. Renshaw, Q.C., for the plaintiff, said that the fact was not disputed that the lights were ancient. The plaintiff not only asked for an injunction to restrain the obstruction, but also for a mandatory order to pull down a piece of wall which had been erected by the defendant. His lordship had previously granted an interim order restraining the defendant from doing what was complained of, but declined to make a mandatory order to pull down the wall. Since then the defendant had done nothing but pull down a few bricks, and had done nothing to abate the interference. The plaintiff complained that the access of light to two of his windows in particular had been interfered with. The learned counsel said that down to 1894 there was near the new wall of the defendant a public pathway. In that year an arrangement was come to with the Local Authority by the defendant by which another public footpath was substituted for it, and defendant was allowed to take possession of the ancient footpath. The property of the plaintiff was divided from the defendant's by a wall 3 ft. 6 in. high, and it was on the further side of that from the plaintiff's house that the public footpath ran. On October 14, 1896, the defendant began to build a wall close up to the boundary of the plaintiff's wall. On October 17 plaintiff consulted his architect, Mr. Crawshaw, as to the plans, but these had not been deposited at the office of the Local Authority when he went to see them. On November 16 Mr. Crawshaw found the plans had been deposited, and defendant was told that he would not be allowed to interfere with the plaintiff's access of light. However the defendant did erect the wall and hence these proceedings.

The defence was that the wall in question would not materially affect the access of light to the plaintiff's premises.

After hearing evidence his lordship, in giving judgment, said that the defendant at his own risk had built this wall without leave and injured his neighbour's rights, and he thought he must remove what he had put up. The injunction would be granted in the ordinary form—both prohibitive and mandatory—so as not to interfere with the access of light to the two windows, and defendant must pay the costs of the action.

Judgment for the plaintiff accordingly.

## MEETINGS.

SATURDAY, NOVEMBER 13.

*South-West Polytechnic Institute (Manresa-road, Chelsea).*—Miss Florence M. Gardiner on "The History of British Furniture, from Anglo-Saxon Times to the end of the Eighteenth Century." II. 3 p.m.

*Sanitary Institute (Demonstrations for Sanitary Officers).*—Inspection at the Sewage and Destructor Works, Ealing. 2.15 p.m.

MONDAY, NOVEMBER 15.

*Royal Institute of British Architects.*—Mr. Arthur S. Flower, M.A., F.S.A., on "Renaissance Architecture in Malta, with Special Reference to the Buildings of the Order of St. John." 8 p.m.

*Carpenters' Hall, London Wall (Lectures on Building and Sanitary Construction).*—Mr. James Bartlett on "Setting Out Work and By-Laws." 8 p.m.

*Sanitary Institute (Lectures for Sanitary Officers).*—Dr. G. Reid on "Sanitary Appliances." 8 p.m.

*Borough Polytechnic Institute.*—Distribution of Prizes and Certificates by Professor J. Stuart. 8 p.m. The workshops and laboratories will be open for inspection from 7 to 7.45 p.m.

*Liverpool Architectural Society.*—Professor Simpson on "The Use of Books." Meeting to be held in the Picton Library, William Brown-street. 6.30 p.m.

*Leeds and Yorkshire Architectural Society.*—(1) Address by the President, Mr. George Corson; (2) Distribution of Prizes. 7.30 p.m.

TUESDAY, NOVEMBER 16.

*Institution of Civil Engineers.*—Paper to be discussed: "The Manchester Ship Canal," by Sir E. Leader Williams, with papers descriptive of "The Eastham Division," by Mr. Whately Eliot, "The Runcorn Division," by Sir E. Leader Williams, and "The Irlam Division," by Mr. W. O. E. Meade-King. 8 p.m.

WEDNESDAY, NOVEMBER 17.

*Architectural Association Discussion Section.*—Mr. J. Hunt on "Ecclesiastical Vestments."

*Sanitary Institute.*—A discussion on "The Pollution of Water Supplies by Encampments of Hop-Pickers, Casual Workers, Tramps, &c." To be opened by Professor W. H. Corfield in reference to the dangers of pollution of Municipal water supplies, and by Miss M. A. Chreiman in reference to the sanitary control of hop-pickers, &c. 8 p.m.

*Sanitary Institute (Demonstrations for Sanitary Officers).*—Inspection in the Parish of St. George's, Hanover-square. 2 p.m.

*Society of Arts.*—Major-General Sir Owen Tudor Burne on "The Colonies: Their Arts, Manufactures, and Commerce." 8 p.m.

*British Archæological Association.*—Mr. Thos. Blashill on "Some Illustrations of Domestic Spinning." 8 p.m.

*Builders' Foremen and Clerks of Works' Institution.*—Ordinary meeting of the members. 8 p.m.

*Edinburgh Architectural Society.*—Mr. J. F. Matthew on "Italy." 8 p.m.

*Northern Architectural Association.*—The President, Mr. Frank W. Rich, will deliver his inaugural address. 7.30 p.m.

THURSDAY, NOVEMBER 18.

*Sanitary Institute (Lectures for Sanitary Officers).*—Mr. W. C. Tyndale on "House Drainage." 8 p.m.

SATURDAY, NOVEMBER 20.

*South-West Polytechnic Institute (Manresa-road, Chelsea).*—Miss Florence M. Gardiner on "The History of British Furniture from Anglo-Saxon Times, to the end of the Eighteenth Century." III. 3 p.m.

## RECENT PATENTS:

### ABSTRACTS OF SPECIFICATIONS.

22,067.—CLAY PRESSES AND BRICKS FORMED THEREBY: *A. E. Nicholl.*—Inventor describes improvements which relate particularly to dry press brick-making machinery, as described in Amended Specification No. 2,071*, A.D. 1891; but also suitable for other press brick making. The present claim is for stamper dies or moulds, with relief holes in cover plates operated by springs, the construction of hopper, the sanding of bricks or blocks, construction of scrapers and frog plate, with inclined frog in press.

27,383.—SOLDERING BITS: *A. Shirley.*—Invention relates to soldering-bits heated by oil, gas, or electricity, and consists in the form and arrangement of the internal chamber, reservoir, passages, &c.

26,322.—LEAD PIGMENTS: *J Fairlie.*—Relates to red lead, which is very apt to settle and dry up. To counteract this inventor adds to dry red lead a small percentage of chloride of soda, sulphate of magnesia, sulphate of soda, muriate of magnesia, muriate of lime, and salts of iodine and bromide, not more than 1 per cent. in all. These are mixed together and dried.

26,697.—DOVETAILING: *R. Robinson.*—Invention consists in mitreing the adjacent edges at box corners, &c., by forming therein a dovetailed or undercut slot and fitting therein a correspondingly dovetailed key.

27,430.—WINDOW FASTENERS. *J. A. Longue.*—In French windows invention consists in a fastener with sliding and pivotted latches, working in curved parts of window frames, which engage rollers.

27,461.—ROOFING TILES: *C. Watson.*—In order to render tile roofs more waterpoof, inventor constructs tiles with their upper faces or sides fluted or channelled, with sinking or outstanding parts, either arranged longitudinally, transversely, or diagonally.

4,658.—PLUMBER'S, &C., POT: *J. Hussey.*—Inventor claims, in a melting-pot, the combination of three legs with a rim formed integrally with the pot, the said rim being adapted to receive upper ends of legs.

5,531.—EARTH CLOSETS: *C. A. Jensen.*—Invention consists in a closet cover constructed so as to form a reservoir for disinfecting substances, such as earth, ashes, &c., which are strewn out by portions whenever the cover is closed.

### NEW APPLICATIONS FOR LETTERS PATENT.

OCTOBER 25.—24,617, J. Dean, Water-closets.—24,628, W. Webb, Combined Latch and Bolt for Doors and Gates.—24,660, E. Ridges, Window Frames.—24,690, T. Drew, Bolts for Fastening Doors, Gates, &c.

OCTOBER 26.—24,737, J. Goulson, Water Tap.—24,750, T. Turner, Tipping Waggons.—24,765, A. Tyler, Window Sash Fasteners.—24,788, B. Gypson, Skylight Frames, &c.

OCTOBER 27.—24,862, F. Le Poideven, System of Hot Water Circulation for Greenhouses, &c. — 24,871, F. Grosvenor, Apparatus for Shaping Clayware.—24,876, J. Turner, Wood-planing Machines. — 24,910, W. Pearce, Joints for Stone and Earthenware Pipes.

October 28.—24,952, W. Johnson, Floor Hinges for Doors.—24,953, J. Webb, Mica Flap Air-Inlet Valve.—24,956, W. Harris, Ventilators of Horticultural Buildings.—24,969, W. Dalton, Sanitary Water-closet.—24,994, W. Sugg, Ventilating Cowls.

October 29.—25,079, J. & H. Crankshaw, Hanging Curtains for Hinged or Swinging Doors and Apparatus therefor.—25,093, W. Osbaldeston, Fastenings for Windows.—25,103, J. Hoggett, Connexion with Gully Traps or Drains.—25,108, E. Collier, Brick Cutting Tables.—25,116, J. Cooke, Sliding Window Sashes.

October 30.—25,180, T. Flynn, Window Sashes.—25,182, T. C. Fawcett, Limited, and J. Fawcett, Presses for Brick-making Machines.—25,197, E. Marr, Cement Tiles.—25,206, W. Dingle and others, Smoke Ejector, Chimney, and Ventilating Shaft.

### PROVISIONAL SPECIFICATIONS ACCEPTED.

26,306, G. Scott, Concrete Building Apparatus.—21,169, E. Ashcroft, Ball Gully for the Prevention of Back Pressure in Drains. — 21,589, J. Elphinstone

# COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENT.

## COMPETITIONS.

| Nature of Work. | By whom Advertised. | Premiums. | Designs to be delivered. |
|---|---|---|---|
| Fire Station, Dwellings, &c. | Bootle Corp. | 50 guineas, 25 guineas (under conditions) | Dec. 31 |
| *Public Library, Port Elizabeth, South Africa | Committee | 100 guineas and 50 guineas | Feb. 15 |
| *Scheme for Sewage Disposal | Belper U.D.C. | 50 guineas and 25 guineas | May 1 |

## CONTRACTS.

| Nature of Work or Materials. | By whom Required. | Forms of Tender, &c. Supplied by | Tenders to be delivered. |
|---|---|---|---|
| Reservoir, Rettendon | Chelmsford R.D.C. | J. C. Smith, Surv. Tindal-square | Nov. 15 |
| *Hopper Barge | Plymouth Corp. | J. Paton, Boro Surveyor's Office | do. |
| Four Houses, &c Hollderthorpe, Bridlington Quay | J. Atkinson | J. Barnshaw, Archt. Bridlington Quay | Nov. 16 |
| House at Sewage Works, Roundwood | Rawmarsh U.D.C. | J. Platts, Archt. Old Bank-buildings, Rotherham | do. |
| Alterations at Workhouse | Rotherham Union | J. Platts, Archt. High-street | do. |
| Pipe Sewers, &c. Richmond Park District | Rotherham Corp. | H. H. Bickmott, Council Hall | do. |
| Private Street Works | Bootle (Lancs) Corp. | Borough Engineer, Town Hall | do. |
| House, Lossie Wynd, Elgin, N.B. | ..... | A. & W. Reid & Wittet, Archt. Elgin | do. |
| *Paving New Street | Camberwell Vestry | O. S. Brown, Vestry Hall, Camberwell | Nov. 17 |
| Sewering, &c. Clarks-street | Stockport Corp. | J. Atkinson, C.E. St. Petersgate | do. |
| Sewer, Hirst | Ashington U.D.C. | A. Wood, Surv. Council Offices | do. |
| Additions to Workhouse | Market Bosworth Union | R. J. & J. Goodacre, Archts. 5, Friar-lane, Leicester | do. |
| Eight Houses, Fountain-street, Morley, Yorks | R. W. Slater | C. B. Clegg, Archt. 2, Pool-street, Morley | do. |
| Laying Eight Miles Cast-iron Pipes | Edinburgh Water Trustees | J. Wilson, C.E. 73A, George-street, Edinburgh | do. |
| Stoneware Pipes, &c. High-street, Kelvedon | Braintree R.D.C. | E. H. Bright, Surv. High-street, Kelvedon | do |
| Pipe Sewer, Rain-lane, Illingworth | Halifax Corporation | E. R. S. Escott, C.E. Town Hall | do. |
| Road Works, Crossley-street, Askham | Dalton-in-Furness U.D.C. | Surv. Council Offices | do. |
| Additions to Ben Marche, King-street Bridlington Quay | Messrs. Marshall | J. Earnshaw, Archt. Wellington-road | Nov. 15 |
| Stabling and Warehouse, Low Bridge, Keighley | W. Summerscales & Son, Ltd. | W. & J. R. Bailey, Archt. Keighley | do. |
| Shop and Cafe, Skinner-street, Whitby | Jas. Gray | E. H. Smales, Archt. 5, Flowergate, Whitby | do. |
| House, Heysham, Bradford, Yorks | ..... | Hycroft & Firth, Archt. Bank-buildings, Manchester-road, Bradford | do. |
| Police Station, Port Talbot, Wales | Glamorgan C.C. | County Surveyor, Bridgend | Nov. 19 |
| Sewerage Works, Wooley Colliery | Durham R.D.C. | G. Gregson, Surv. 43, Western Hill, Durham | do. |
| *Seven Dwelling Houses, Burnham, Essex | Admiralty Works Department | Avenue House, Northumberland-avenue, W.C. | do. |
| Schools, Coelbren, Wales | Ystradgynlais Sch. B. | W. P. Watkins, Ongar, Ystradgynlais, R.S.O. Breconshire | Nov. 20 |
| Roads and Sewers, Paignton, South Devon | P. E. Singer | W. J. Wyatt, Engr. Oldway, Paignton | do. |
| Bridge over Walverden Water | Nelson (Lancs) Corp. | B. Ball, C.E. Town Hall | do. |
| Road Works, St. John's-road | Birmingham Corp. | J. Price, City Surv. Council House, Birmingham | do. |
| Road Works, Kirkstead-road, &c. | Blackwell (Derbyshire) R.D.C. | H. Silcock, Engr. 20, Westgate, Mansfield | do. |
| Alterations, Workhouse | Lismeaken (Ireland) Union | J. O'R. Hoey, Union Offices, Lismeaken | do. |
| School, House, &c. Llandrygarn, Anglesey | ..... | J. Owen, Menai Bridge, North Wales | do. |
| Hospital Ward, Redruth | ..... | A. H. Jenkin, Alma-place, Redruth | do. |
| *170 Dual Desks and other School Furniture | Watford School Board | Sedgwick, Turner, & Oddie, Watford-place, Watford | Nov. 22 do. |

## CONTRACTS—*Continued.*

| Nature of Work or Materials. | By whom Required. | Forms of Tender, &c. Supplied by | Tenders to be delivered. |
|---|---|---|---|
| Schools | Ulverston School Bd. | J. Y. McIntosh, Cornwallis-st. Barrow-in-Furness | Nov. 22 |
| Concrete Reservoir, &c. | Harnsea (Yorks) U.D.C. | P. Gaskell, C.E. Surv. Hornsea | do. |
| Pipe Sewer, &c. Slack | Barkisland U.D.C. | J. B. Holroyd, Surv. Council Offices | do. |
| Extension of Offices, Brentwood, Essex | Visitors, County Lunatic Asylum | W. P. Gepp, Chelmsford | do. |
| Stables and Fire Engine Station | Great Harwood (Lancs) U.D.C. | Briggs & Wolstenholme, Archts. Richmond-terrace, Blackburn | do. |
| *New Road and Sewers | ..... | F. & W. Stocker, 30 & 31, Queen-street, E.C. | do. |
| Sewers, Cheston-road | Aston Manor R.D.C. | H. Richardson, C.E. Council House | Nov. 23 |
| Auction Mart, &c. Brook-street | Preston Corporation | Borough Engineer, Town Hall | do. |
| *Wood Paving | West Ham Council | Borough Engineer, Town Hall, Stratford | do. |
| *Making-up Road | Shoeburyness U.D.C. | Harold Harris, Clarence-street, Southend-on-Sea | do. |
| *Erecting Coroner's Court and Mortuaries | Lewisham B. of W. | Surveyor's Office, Board's Office, Lewisham, S.E. | do. |
| Two Cottages, Ballyhalis, Ireland | G. N. Ry. Co. | Chief Engineer, Amien's-street, Dublin | Nov. 23 |
| *Mosaic Pavement | Hull Corp. | City Engr. Hull | Nov. 26 |
| Providing and Laying C. I. Pipes, Long Framlington, Rothburn | ..... | W. J. Robinson, New Moor Hall, Long Framlington | Nov. 27 |
| *Underground Convenience | Deal Corporation | Borough Surv. 18, High-street, Deal | Nov. 29 |
| *Repairs to Road, Gore Farm Hospital | Met. Asylums Board | A. & C. Harston, Archts. 15, Leadenhall-st. E.C. | do. |
| Post Office, Furfar, N.B. | H.M. Office of Works | Sec. 12, Whitehall-place, London, S.W. | Nov. 30 |
| Sewerage Works | Launceston Corp. | A. P. J. Cotterell, C.E. Lonsdale-chambers, Baldwin-street, Bristol | Dec. 1 |
| Dock (9 acres) | Llanelly Harbour and Barry Nav. Commrs. | Sir A. M. Rendel, C.E. 8, Great George-st. S.W. | do. |
| *Alterations, School | Enfield Sch. Bd. | G. R. T. Lawrence, 181, Queen Victoria-st. E.C. | Dec. 2 |
| Service Reservoir, House, &c. Penylan Hill | Cardiff Corp. | C. H. Priestley, Town Hall | do. |
| Church Building Work, Holy Trinity, Aberystwith | ..... | Rev. Preb. Williams, Rector, Aberystwith | Dec. 4 |
| Warehouse, &c. Redditch | Sheffield and Midland Ry. Co. Committee | O. S. Holt, Sec. London-rd. Station, Manchester | Dec. 6 |
| School, near Stroud | Rodborough Sch. Bd. | E. C. Gough, Surv. 5, John-street, Adelphi, W.C. | do. |
| *Construction of Pontoon and Timber Dolphins | Southampton Harbour Board | E. Cooper Poole, 4, Portland-st. Southampton | do. |
| Draining Knott-lanes, Bardsley, Lancs. | Limehurst R.D.C. | S. E. Kettlewell, Surv. Union Offices, Ashton-under-Lyne | No date |
| *Cottages, Woodham Ferris, Essex, &c. | ..... | Brake, 18, Northumberland-grove, Tottenham | do. |
| *Memorial | Stanhope Memorial Com. | S. Geo Overton, 2, Manor House-st. Horncastle | do. |
| Offices | Ashton-under-Lyne Co-op. Soc | T. D. Lindley, Archt. Ashton-under-Lyne | do. |
| Workhouse Hospital, Patricroft, Lancs | Barton-upon-Irwell Union | Worthington & Son, Archts. 43, Brown-street, Manchester | do. |
| Rebuilding Killimure House, Killimure, Ireland | ..... | P. P. Mulge, C.E. 9, Harcourt-terrace, Dublin | do. |
| Two Houses, Street-lane, Leeds | ..... | E. Wray, Spencer-place, Leeds | do. |
| Villa and Stabling, Rumney, Cardiff | ..... | S. Rooney, 9, Quay-street, Cardiff | do. |
| *Four Cottages, Woodham Ferris, Essex | ..... | Mr. Brake, 18, Northumberland-grove, Tottenham | do. |
| Pair semi-detached Houses, Fernleigh-road, Grange-over-Sands | ..... | J. Stalker, Archt, 57, Highgate, Kendal | do. |

## PUBLIC APPOINTMENT.

| Nature of Appointment. | By whom Advertised. | Salary. | Applications to be in. |
|---|---|---|---|
| *Assistant Surveyor | N. Riding of Yorks. County Council | 200l. per ann. Travelling Expenses, &c. | Dec. 11 |

*Those marked with an asterisk (*) are advertised in this Number.* Competitions, *p.* iv. Contracts, *pp.* iv. vi. viii. & xix. Public Appointments, *pp.* xvi. & xix.

Screw. — 21,590, J. Elphinstone, Bolt. — 21,960, R. Gregory, Ventilating Sewers, &c.—22,093, J. Meeson, Water Closet Tank and Connexions.—22,712, M. Platzer, Fastenings for Swinging Window Sashes.—23,217, B. Puri, Urinal Attachments for Water-closets.—23,265, J. Milne, Window Casement Fastener.—23,515, W. Smith, Plaster —23,544, R. Sykes, Apparatus for Operating the Water Supply of Cisterns in Water-closets and for other suitable purposes.—23,590, J. Russell, Register Stoves.—23,648, T. Walton and R. Parkinson, Holding at any height the Movable Sashes in Windows and Doors.—23,649, T. Walton and R. Parkinson, Holding at any height and securing of the Movable Sashes in Windows and Doors.—23,924, A. Twamley, Sink Pedestals.

COMPLETE SPECIFICATIONS ACCEPTED.

*Open to opposition for two months.*

23,888, G. Stephen, Ventilating Buildings, &c.—2,407, J. Chaplin, Sliding Bolts for Doors.—27,528, W. Allen, Chimney Cowls.—28,089, O. Elphick, Waste Water Preventer.—28,888, E. Homan, Walls, &c.—29,420, B. Mills, Brick Kilns.—19,490, G. Döllner, Drying Kilns.—22,417, A. Mitchell and J. Bolger, Sewer Traps.

## SOME RECENT SALES OF PROPERTY:

### ESTATE EXCHANGE REPORT.

October 22.—By CHARLES HALL.

| | |
|---|---|
| Brixton.—14, Barrington-rd., u.t. 25½ yrs., g.r. 6*l.*, r. 65*l.* | £440 |
| 8, Sudbourne-rd., u.t. 70 yrs., g.r. 7*l.* 7s., r. 36*l.* | 320 |

By JAMES LEWIS & CO.

| | |
|---|---|
| Willesden.—Roundwood Pk., "Knowles Tower" and 1 a. 0 r. 18 p., f. | 2,000 |

By OSWALD R. GREEN & CO.

| | |
|---|---|
| Bermondsey.—4, 6, 8, and 10, Chapel-pl., f., r. 130*l.* | 1,850 |
| Dulwich.—Thurlow Pk.-rd., "Clevedon Lodge," u.t. 51 yrs., g.r. 12*l.* 2s., e.r. 90*l.* | 750 |

October 23.—By BLACKFORD & SON (at Southmolton).

| | |
|---|---|
| West Anstey, Devon.—"Guphill Farm," 204 a. 1 r. 26 p., f. | 1,350 |

By NOKES & NOKES.

| | |
|---|---|
| Caledonian-rd.—30 and 31, North-rd., u.t. 63 yrs., g.r. 13*l.*, r. 68*l.* | £520 |
| Holloway.—39, Devonshire-rd., u.t. 55 yrs., g.r. 5*l.* 5s., r. 36*l.* | 330 |
| Barnsbury.—95, Cloudesley-rd., f., r. 42*l.* | 600 |

October 25.—By J. H. BETHELL.

| | |
|---|---|
| East Ham.—Shrewsbury-rd., "Bickley House," f., r. 34*l.* | 460 |
| Shrewsbury-rd., five freehold residences | 1,700 |
| 112, Stafford-rd., f. | 280 |
| 3, 4, 5, and 6, Stafford-ter., f., r. 140*l.* | 2,130 |
| Upton Park.—25, 27, and 29, Walpole-rd., f. | 745 |
| Whitfield-rd., &c., f.g.r. 80*l.* 10s., reversion in 86 yrs. | 2,245 |
| Romford.—London-rd., "The Slaters' Arms" b.-h, f.g.r. 8*l.*, reversion in 45 yrs. | 470 |
| London-rd., f.g.r. 23*l.* 8s., reversion in 44 yrs. | 655 |
| London-rd., f.g.r. 35*l.* 17s. 6d., reversion in 47 yrs. | 885 |
| London-rd., "Barn Close Meadow," 6 a. 0 r. 27 p., f. | 900 |

By J. C. TOWNER (at Eastbourne).

| | |
|---|---|
| Pevensey Bay, Sussex.—Two enclosures of land, 20 a. 3 r., f. | 2,100 |
| Eastbourne, Sussex.—16, Devonshire-pl., f. | 2,520 |

By GRIFFITHS & CHENNELL (at Newmarket).

| | |
|---|---|
| Newmarket, Suffolk.—Exning-rd., "The Croft" and 2 a. 3 r. 12 p., f. | 3,300 |
| Exning-rd., cottage, loose boxes, and paddock, 1 a. 3 r. 4 p., f. | 1,200 |

By H. J. WAY (at Newport).

| | |
|---|---|
| Newport, Isle of Wight.—Watergate-rd., "St. John's Vicarage," f. | 700 |

By M. DE ROME & SON (at Windermere).

| | |
|---|---|
| Hawkshead, Lancashire.—"Sawry Hotel" and 3 a. 1 r. 22 p., f. | 2,000 |
| "Bryer's Cottage," f. | 1,040 |
| "Pate Crag Coppice," 20 a. 1 r. 18 p., f. | 475 |

By FRANK LLOYD (at Wrexham).

| | |
|---|---|
| Cerney, Denbigh.—A plot of land and two cottages, area 1,295 yds., f. | 138 |
| "Boat House Farm Cottages," area 2,170 yds., f. | 395 |
| A freehold cottage and field, 0 a. 3 r. 22 p. | 200 |

October 26.—By BROAD & WILTSHIRE.

| | |
|---|---|
| Belgravia.—58 and 60, Eaton-ter., u.t. 23½ yrs., g.r. 66*l.* 16s., e.r. 125*l.* | £730 |

By C. RAWLEY CROSS & CO.

| | |
|---|---|
| Kensington.—Addison-gdns., f.g.r. 112*l.* 10s., reversion in 97 yrs. | 3,215 |
| Addison Park Mansions, f.g.r. 70*l.*, reversion in 98 yrs. | 2,030 |

By DRIVER & CO.

| | |
|---|---|
| City of London.—12 and 13, Poultry, u.t. 37 yrs., g.r. 485*l.*, r. 1,310*l.*, including mortgages | 5,431 |

By ROBINSON & SONS.

| | |
|---|---|
| Mitcham, Surrey.—Church-st., "The Eight Bells" b.-h., with house and shop and two cottages adjoining, f., r. 60*l.* | 1,325 |
| 1 to 4, Laburnham-cottages, f., r. 66*l.* 6s. | 590 |

By E. W. RICHARDSON & SON.

| | |
|---|---|
| Tottenham.—56, Northumberland Pk., r. 64*l.*; also two building sites adjoining, f. | 1,230 |
| New Southgate.—Springfield-rd., &c., eight plots of building land, f. | 665 |
| 122, High-rd., u.t. 69 yrs., g.r. 6*l.* 10s., r. 64*l.* | 725 |
| Tottenham.—45, 47, 49, and 51, Asplin's-rd., f., e.r. 104*l.* | 835 |
| Westbourne Pk.—62 and 64, Southam-st., u.t. 66 yrs., g.r. 14*l.*, e.r. 105*l.* | 350 |

By DEBENHAM, TEWSON, & CO.

| | |
|---|---|
| Frensham, Surrey.—Three enclosures of land, 15 a. 1 r. 19 p., f., r. 16*l.* 10s. | 1,070 |
| A Block of building land, 7 a. 0 r. 24 p., f. | 1,100 |
| An enclosure of land, 3 a. 1 r. 26 p., f. | 300 |

By ORGILL, MARKS, & ORGILL (at Masons' Hall Tavern).

| | |
|---|---|
| City of London.—Bucklersbury, "The Green Man" p.-h., u.t. 44 and 36 yrs., r. 655*l.*, with goodwill | 21,000 |
| Ongar, Essex.—"The King's Head Hotel" and 1 acre, f., with goodwill | 6,460 |

By W. ROLFE (at Masons' Hall Tavern).

| | |
|---|---|
| Notting Hill.—Ladbroke-grove, "The Earl Percy" p.h., u.t. 56½ yrs., r. 120*l.*, with goodwill | 35,000 |

By WILLIAM HOUGHTON (at Walthamstow).

| | |
|---|---|
| Walthamstow.—Havant-rd., 41 plots of building land, f. | 1,851 |

40, Richard's-pl. and block of land adjoining, f. £565
10, Aubrey-rd., f. 275
12, 14, and 16, Byron-rd., f. 500
7, Flora-cottages, f. 250

By Alfred Richards (at Tottenham).

Tottenham.—4, St. Paul's-rd., f. 455
182 and 182A, Northumberland-pk., u.t. 53 yrs., g.r. 0/., r. 42/. 292

By Sedgwick, Son, & Weall (at Rickmansworth).

Rickmansworth, Herts.—High-st., a freehold house, with suite of offices adjoining 1,700

By A. Mansell & Co. (at Shrewsbury).

Alderbury, Salop.—"The Hayes' Farm," 128 a. 3 r. 13 p., f. 2,460
"The Pringle Wood Coppice," 1 a. 3 r. 30 p., f. 230

October 27.—By Harman Bros.

Clapton.—19, Clifden-rd., u.t. 70 yrs., g.r. 5/., r. 28/. 255
81, Median-rd., u.t. 70 yrs., g.r. 6/., r. 32/. 285
221, Brooke-rd., u.t. 75½ yrs., g.r. 6/., e.r. 36/. 365

By Harrison & Holmes.

Hoxton.—3, Buckland-st., u.t. 37 yrs., g.r. 5/. 5s., r. 36/. 300

By Inman & Co.

Hampstead-rd.—11 and 12, Little George-st., u.t. 13 yrs., g.r. 9/. 12s., r. 48/. 130

By Mark Liell & Son.

Bermondsey.—212 to 232 (even) Rolls-rd., u.t. 42 yrs., g.r. 52/. 2,475

By G. Pearce & Sons.

Hoxton.—58 and 60, South-st., also "South Cottage," u.t. 12 yrs., g.r. 13/. 10s. 250

By R. Tidey & Son.

De Beauvoir Town.—28, Buckingham-rd., u.t. 21¾ yrs., g.r. 3/. 6s., r. 30/. 210

Dalston.—59, Brougham-rd., u.t. 44 yrs., g.r. 3/. 10s., r. 39/. 285

By W. N. Willoughby.

Norwood.—2, St. Luke's Villas, f. 470

Holloway.—43, Harvist-rd., u.t. 45 yrs., g.r. 6/. 10s., r. 36/. 350

By Matthew Miles (at Masons' Hall Tavern).

Aldgate.—Mansell-st., "The George" p.-h., f., r. 80/. 3,560

By Thomas Neale (at Nottingham).

Nottingham.—Alfreton-rd., "The Windmill Inn," with brewhouse and seven tenements, f. 7,000
Truman-st., seven freehold tenements 1,050
Woodborough-rd., shop and premises, area 2,956 yds., f. 610

By G. J. Oliver (at Hawick).

Hawick, Roxburgh.—The Estate of Stirches and Whitehaugh, 1,140 a. 32,000

October 28.—By Jenkins & Sons.

New Cross.—6 and 7, Brindley-st., u.t. 62¼ yrs., g.r. 6/. 405

Honor Oak.—3, Mundania-rd., u.t. 85 yrs., g.r. 8/., r. 50/. 575

Brixton.—150, Loughborough Park, u.t. 25 yrs., g.r. 6/., r. 36/. 250

Lewisham.—3 and 5, Tyrwhitt-rd., u.t. 58 yrs., g.r. 9/. 5s., e.r. 90/. 740

By C. C. & T. Moore.

Stoke Newington.—81, Manor-rd., u.t. 78 yrs., g.r. 8/. 8s., r. 48/. 535

Poplar.—Cottage-st., a freehold smithy and two plots of building land adjoining 480

Woodford.—Derby-rd., "Stanley House," f., r. 35/. 500

By Newbon, Edwards, & Shephard.

St. Luke's.—83, Goswell-rd., u.t. 23 yrs., g.r. 55/., e.r. 120/. 120

Holloway.—37, Stock Orchard-cres., u.t. 44½ yrs., g.r. 9/., e.r. 42/. 330

Deptford.—19, Reculver-rd., u.t. 78 yrs., g.r. 6/., r. 40/. 280

Ball's Pond.—1, Bishop's-grove, u.t. 65 yrs., g.r. 4/. 4s. 210

By Stimson & Sons.

Pimlico.—38, Cumberland-st., u.t. 36 yrs., g.r. 8/., r. 78/. 460

Lewisham.—12 and 13, Rennell-st., u.t. 59 yrs., g.r. 12/. 12s. 310

Lambeth.—95, Lambeth Palace-rd., u.t. 11¼ yrs., g.r. 9/., e.r. 65/. 245

Brixton.—2 to 24 (even), Brailsford-rd., u.t. 77 yrs., g.r. 8/., r. 334/. 2,850

46, Arlingford-rd., u.t. 90 yrs, g.r. 8/. 10s., e.r. 45/. 335

Old Kent-road.—Ormside-st., "The Baker and Basket," b.-h., improved rental of 30/., u.t. 13 yrs. 205

Tottenham.—72, Welbourne-rd., u.t. 80½ yrs., g.r. 6/., r. 32/. 295

By Dyer, Son, & Hilton.

Blackheath.—38, Lee-rd., u.t. 58 yrs., g.r. 11/. 5s. 1,200

By A. & A. Field.

Commercial-road, E.—14, Berner-st., f., r. 52/. 8s. 825

Lea Bridge.—Lea Bridge-rd., f.g.r. 14/., reversion in 35 yrs. 410

Bromley.—15 and 17, Norris-rd., f., r. 39/. 410

By W. R. Nicholas & Co.

Ingatestone, Essex.—High-rd., "Ardtully," and 1 a. 1 r. 38 p., f., r. 110/. 2,100

Beckenham.—12, 13, and 14, Arthur-rd., u.t. 69 yrs., g.r. 12/. 340

Luton.—Old Bedford-rd., "The Pheasantry," and 1 a. 2 r. 9 p., f. 650

By Edwin Evans.

Islington.—1, 4, 5, and 6, Baldwin-ter.; 111, 113, 115, and 117, St. Peter-st., u.t. 49½ and 47½ yrs., g.r. 47/.; also i.g.r. 17/., u.t. 49½ yrs., g.r. 7/. 2,250

Battersea.—Culvert-rd., f.g.r. 11/. 10s., reversion in 84 yrs. 288

Putney.—Nubid-ter., &c., f.g.r. 130/., reversion in 88 yrs. 4,260

15 to 33 (odd), Weimer-st., f., r. 195/. 4,100

Montagu-ter., f.g.r. 30/., reversion in 97 yrs. 800

Surbiton.—Paragon-grove, f.g.r. 22/., reversion in 96 yrs. 550

By Segrave, Browett, & Taylor.

Walthamstow.—86, Markhouse-rd., f., r. 25/. 405

Kentish Town.—12, Spencer-rd., u.t. 71 yrs., g.r. 4/. 15s. 310

By Marsh & Son (at Winsford).

Winsford, Cheshire.—"Swanlow House Farm," 85 a. 2 r. 4 p., f. 2,125

Various enclosures, 15 a. 0 r. 2 p., f. 1,710

Two freehold cottages and 0 a. 1 r. 37 p. 200

By Henry Hendriks (at Birmingham).

King's Heath, Worcester.—11, 13, 15, and 17, Goldsmith-rd., u.t. 94 yrs., g.r. 13/., r. 72/. 16s. £635

By Walter Ludlow & Briscoe (at Birmingham).

Snitterfield, Warwick.—"Comyns Park Farm," "The Old Brick Farm," and "Grove Farm Cottage," 291 a. 2 r. 26 p., f. 5,440

October 29.—By White, Berry, & Taylor.

Regent-st.—13, Brewer's-st., f., e.r. 140'. 2,065

By A. J. Sheffield.

Poplar.—266, High-st., f., e.r. 55/. 625

Canning Town.—52, 54, and 56, Scott-st., u.t. 68 yrs., g.r. 10/. 10s. 250

85 and 87, Scott-st., u.t. 69½ yrs., g.r. 8/. 15s. 250

1, Rose-villas, u.t. 90 yrs., g.r. 4/. 4s. 135

Ratcliff.—42, 44, and 46, Caroline-st., u.t. 57 yrs., g.r. 13/. 10s. 235

Ilford.—Perkins-rd., six freehold building plots 110

By Holcombe, Betts, & West.

Pimlico.—66, 68, 70, and 72, Denbigh-st., u.t. 30 yrs., g.r. 32/., r. 240/. 2,070

By F. W. Stokes.

Crawley, Sussex.—"The Railway Hotel," f. 8,050

Two freehold houses (one with shop), f., r. 50/. 1,300

A freehold steam mill, with two cottages, and nearly three-quarters of an acre 1,500

October 30.—By Stafford & Rogers (at Bedford).

Gamlingay, Cambs.—St. Ive's-rd., three plots of land, 11 a. 2 r. 2 p., f. 450

Dennis Green, a freehold field, 7 a. 2 r. 3 p. 390

Enclosures of land, 11 a. 3 r. 9 p., f. 560

November 1.—By R. & A. G. Thorowgood.

Ware, Herts.—Baldock-st., "The Hope Maltings," f., r. 500/. 5,400

By Eastman Bros.

Sydenham.—Lawrie Pk. Gardens, "The Lorlands," f. 2,100

Stoke Newington.—57, Mildmay-pk., f., r. 55/. 900

By G. Stockings.

Hackney.—38 and 44, Morning-lane, c., r. 55/. 490

Morning-lane, c.g.r. 45/., reversion in 50½ yrs. 1,420

Stoke Newington.—69, Boleyn-rd., u.t. 21 yrs., g.r. nil 150

By Willis & Crouch.

Clapton.—4, Presburg-st., u.t. 82 yrs., g.r. 5/. 200

By Mackinder, Parish, & Beaty (at Spilsby).

Partney, Lincs.—Two freehold enclosures, 16 a. 0 r. 4 p. 835

Thorpe St. Peter, Lincs.—A freehold enclosure, 5 a. 3 r. 3 p. 350

Toynton St. Peter, Lincs.—A freehold cottage and enclosure, 7 a. 0 r. 20 p. 250

November 2.—By H. Donaldson & Son.

Haggerston.—1 to 11 (odd), Hay-st., f., r. 76/. 1s. 790

By Norman & Son.

Pinner, Middx.—Eastcote-rd., two enclosures of building land, 12a. 2r. 9 p., f. 4,150

Rickmansworth-rd., a plot of building land, 0 a. 3r. 10 p., f. 275

By Alfred Richards.

Tottenham.—11, 12, 13, and 14, Bruce Grove with two paddocks adjoining, area 4 a. 2 r. 6 p., f. 4,450

Bruce Grove, two plots of building land, f. 1,670

Romford.—1 to 10, Arthur Cottages, u.t. 67 yrs., g.r. 40/. 580

By Cockett & Henderson.

Goring (near) Oxon.—"The Braziers Park Estate," 647 a. 3 r. 26 p., f. 10,250

Walthamstow.—Shernhall-st., "Meadow Bank," u.t. 97 yrs., g.r. 8/. 8s., e.r. 35/. 300

By Debenham, Tewson, & Co.

Blackfriars.—Upper Ground-st., "Leopold Wharf," area 6,320 ft., f. 6,150

75, Upper Ground-st., area 24,935 ft., f. 13,300

Upper Ground-st., f.g.r. 30/., reversion in 17 yrs. 1,350

Southwark.—13½ and 1 to 15 (odd), Sumner-st.; 1 to 10, Prices Court; 1 to 23, Downs Buildings, c., r, 1,006/. 8s. 9,100

Brighton.—54 and 55, West-st., f. r. 160/. 3,500

212, 22, and 23, Duke-st., f., r. 255/. 3,800

Reigate, Surrey.—Main rd., "Belle Vue" and 21a. 0 r. 14 p., f., r. 200/. 8,000

"The Woodhatch Potteries," area 2 a. 2 r. 13 p., f., r. 48/. 1,000

Main rd., "New Lodge," and 10 a. 2 r. 11 p., f., r. 200/. 4,275

Main rd., "Woodhatch House," and 26 a. 3 r. 35 p., f., r. 225/. 6,775

Reigate, Surrey.—Rectorial tithe rent charge of 22/. 325

Rectorial tithe rent charge of 4/. 11s. 9d.; also fee farm rents of 2/. 14s. 125

By T. O. Bennett (at Henstridge).

Henstridge, Somerset.—Enclosures of meadow and orchard, 7 a. 1 r. 13 p., f. 625

Enclosures of pasture, 39 a. 3 r. 26 p., f. 2,335

Enclosures of arable and orchard, 6a. 3 r. 3 p., f. 425

By J. & S. Motion (at Masons' Hall Tavern).

Brighton.—New-rd., "The Colonnade" p.-h., f., with goodwill 11,570

By Lound & Howitt (at Masons' Hall Tavern).

West Smithfield.—Cock-lane, "The Fortune of War" p.-h., u.t. 12 yrs., r. 90/., with goodwill November 3.—By J. J. Deverell. 2,500

Kentish Town.—30, Caversham-rd., u.t. 52 yrs., g.r. 12/., e.r. 63/. 550

Holloway.—72, Lady Margaret-rd., u.t. 71 yrs., g.r. 6/., r. 45/. 455

By Harold Griffin.

Battersea.—132 to 148 (even), New-rd., u.t. 30 yrs., g.r. 36/. 1,170

1, 2, and 3, Ægis-grove, u.t. 30 yrs., g.r. 12/. 270

Stockwell.—1, 2, and 8, Catherina-ter., u.t. 62 yrs., g.r. 20/., r. 110/. 900

Battersea.—Francis-st., "The Princess Royal" b.-h., f., r. 40/. 1,240

73, 75, and 83, Bridge-rd., f., r. 103/. 1,650

***Contractions used in these lists.***—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

## PRICES CURRENT OF MATERIALS.

| TIMBER. | | |
|---|---|---|
| Greenheart, B.G. ton | 8 s/s | s/s/0 |
| Teak, E.I. load | 22/10/0 | 25/10/0 |
| Sequoia, U.S.ft.cu. | 1/8 | 1/10 |
| Ash, Canada load | 3/10/0 | 4/15/0 |
| Birch, do. | 4/7 6 | 6 2 6 |
| Elm, do. | 4/5/0 | 5/10/0 |
| Fir, Dantzic, &c. | 2/0/0 | 4/0/0 |
| Oak, do. | 2/2 6 | 3/2 6 |
| Canada | 5/5/0 | 8/5/0 |
| Pine, Canada red | 0/0/0 | 0/0/0 |
| Do. Yellow | 2/12 6 | 4/12 6 |
| Lath, Dantzic fath | 4/10/0 | 5/10/0 |
| St. Petersburg | 5/0/0 | 6/10/0 |
| Wainscot, Riga, &c., log | 2 2 6 | 3 7 6 |
| Odessa, crown | 2/2 6 | 3 7 6 |
| Deals, Finland 2nd & 1st std 100 | 8 5/0 | 8/15/0 |
| Do. 4th & 3rd | 8,5/0 | 8/15/0 |
| Do. Riga | 6/15/0 | 7/15/0 |
| St. Petersburg, 1st yellow | 10 5/0 | 12/15/0 |
| Do. 2nd yellow | 9 5/0 | 10/15/0 |
| Do. white | 8/15/0 | 10/15/0 |
| Swedish | 9/5/0 | 15/15/0 |
| White Sea | 5/15/0 | 16 5/0 |
| Canada, Pine 1st | 20/15/0 | 26/15/0 |
| Do. do. 2nd | 15/5/0 | 27/15/0 |
| Do. do. 3rd, &c. | 7/15/0 | 11/5/0 |
| Do. Spruce, 1st | 10/15/0 | 12/5/0 |
| Do. do. 3rd and 2nd | 8,5/0 | 9/5 0 |
| New Brunswick | 7/15/0 | 8/5 0 |
| Battens all kinds | 5 0/0 | 10/0/0 |
| Boards, sq., 1 in. prep. | 0/8 6 | 0/15 6 |
| 1st | 0/8 6 | 0/12/0 |
| Do. 2nd | 0/7/0 | 0/12/0 |
| Other qualities | 0/5/0 | 0/6/6 |
| Cedar, Cuba, ft. | /4 | /4½ |
| Honduras, &c. | /3 | /4½ |
| Mahogany, Cuba | /5 | /6½ |
| St. Domingo, cargo av. | /4 | 0/1 3 |
| Mexican, do. do. | .3½ | .4½ |
| Tobasco, do. do. | /4 | .6½ |
| Honduras, do. | /4½ | .6 |
| Box, Turkey, ton | 4/0/- | 25/0/0 |
| Rose, Rio | 7/0/0 | 14/0/0 |
| Bahia | 6/0/0 | 12/0/0 |
| Satin, St. Deming. | 0/0 5 | 0/1/0 |

| TIMBER *(continued)*. | | |
|---|---|---|
| Satin, Porto Rico | 0/0/6 | 0/1/6 |
| Walnut, Italian | 0/0/3 | 0/0/7 |
| METALS. | | |
| Iron—Pig, in Scotland ton | 2/5/6 | 0/0/0 |
| Bar, Welsh, in London | 5/15/0 | 5/17/6 |
| Do. do. at works in Wales | 5/10/0 | 5/12/6 |
| Do. Staffordshire, in London | 6/5/0 | 7/10/0 |
| COPPER—British cake and ingot | 52/5/0 | 52/15/0 |
| Best selected | 52/5 0 | 52/15/0 |
| Sheets, strong | 56/0/0 | 56/10/0 |
| Chili bars | 47/11/3 | 0/0/0 |
| YELLOW MTL lb. | 4½d. | 5¼d. |
| LEAD—Pig Spanish ton | 13/2/6 | 0/0/0 |
| English com. brands | 13/10/0 | 0/0/0 |
| Sheet, English 6 lbs. per sq. ft. and upwards | 14 7 6 | 0/0/0 |
| Pipe | 14/17,6 | 0/0/0 |
| ZINC—English sheet ton | 20/5/0 | 0/0/0 |
| Vieille Montagne | 21/10 0 | 0/0/0 |
| Spelter | 17/17/6 | 0/0/0 |
| TIN—Straits | £2/11/3 | 0/0/0 |
| Australian | 63/5/0 | 63/15/0 |
| English Ingots | 65/15/0 | 66/10/0 |
| Banca | 0/0/0 | 0/0/0 |
| Billiton | 59/15/0 | 60/0/0 |
| OILS. | | |
| Linseed ton | 14/7,6 | 0/0/0 |
| Cocoanut, Cochin | 27/15/0 | 0/0/0 |
| Do. Ceylon | 22/0/0 | 0/0/0 |
| Palm, Lagos | 21/15 0 | 0/0/0 |
| Rapeseed, English pale | 27/12/0 | 0/0/0 |
| Do. Brown | 16 0/0 | 0/0/0 |
| Cottonseed ref. | 14/5/0 | 15/5/0 |
| Olein | 13/10/0 | 14 10/0 |
| Lubricating U.S. | 0 5/3 | 0/7 6 |
| Do. black | 0 5 0 | 0/6 6 |
| TAR—Stockholm barrel | 1/2 6 | 1/6/0 |
| Archangel | 0/12/6 | 0/0/0 |
| Turpentine | 23 6/0 | 0/0/0 |

## TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays*. N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender: and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

BARNES (Surrey).—For the erection of six shops and dwelling-houses on the Elm Grove Estate, Rocks-lane, Barnes. Messrs. F. & W. Stocker, surveyors, 90 and 91, Queen-street, Cheapside:—

| | | | |
|---|---|---|---|
| J. Watt | £6 125 | J. Edwards | £5,537 |
| W. Watson | 5,975 | C. R. Gurr, Chiswick* | 5,150 |

* Accepted.

BELFAST.—For the erection of a new City Hall, for the Corporation. Messrs. E Thomas & Son, architects, 7, Queen Anne's-gate, Westminster. Quantities by Mr. W. H. Stephens, 13, Donegall-square, N. Belfast:—

| | | | |
|---|---|---|---|
| Lovett & Son | £184,686 | H. & J. Martin, Limited, Ormeau-road, Belfast* | £154,864 |
| Henry & Son | 176,548 | | |
| McLaughlin & Harvey | 174,600 | | |
| Campbell & Son | 168,500 | | |

* Accepted.

BIRMINGHAM.—For erecting new dining hall and stores at the Workhouse, for the Guardians. Mr. W. H. Ward, architect, Paradise-street, Birmingham. Quantities by Messrs. Harris & Harris, Bennett Hill, Birmingham:—

| | | | |
|---|---|---|---|
| F. Nicholls | £2 735 | H. Vickers | £2 595 |
| W. J. Whittall | 2,725 | J. Atkinson | 2 393 |
| R. Fenwick | 2 695 | W. Robinson | 2,377 |
| T. H. Whittaker & Co. | 2,620 | Smith & Pitts, 420 and 421, Mosely-road* | 2,277 |
| W. Bishop | 2,545 | | |

* Accepted.

BRENTFORD.—For the execution of tar-paving works, Ealing-road, for the Urban District Council. Mr. Nowell Parr, Surveyor, Boston-road, Brentford:—

| | s. d. | | s. d. |
|---|---|---|---|
| C. Pearce | 2 6 | Mendip Granite and Asphalte Co. | †1 10 |
| Grounds & Newton | 2 1 | Asphalte Limestone Concrete Co., South Tottenham, N. (accepted) | 1 10 |
| J. Smart | *2 04 | | |
| W. E. Constable & Co. | 2 0 | | |

* Or Mendip limestone 1s. 11d. † Mendip limestone.

BRISTOL.—For the erection of school buildings, Westbury Park, for the Bristol School Board. Messrs. La Trobe & Weston, architects, 20, Clare-street, Bristol. Quantities by Mr. W. L. Bernard:—

| | | | |
|---|---|---|---|
| E. Clark | £2,720 | E. Walters | £2,472 |
| H. A. Perse | 2,595 | Hughes & Weeks | 2,470 |
| Wilkins & Gosling | 2,592 | E. Love* | 2 439 |
| Cowlin & Sons | 2,482 | | |

* Reduced to £2,179 5s. 9d., and accepted.

BROMLEY (Kent).—For supplying and laying kerbing and channelling, for the Urban District Council. Mr. Stanley Hawkings, Surveyor:—

| | Kerbing | Channelling. Guernsey Granite. | Aberdeen Granite. | Leicester Syenite. |
|---|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| Fry Bros. | 3/7 2 0 | 1,008 6 8 | 1,114 18 4 | 1,114 18 4 |
| S. Hudson | 352 13 2* | 903 5 0* | 891 19 2 | 925 16 8 |
| G. R. Mann | 397 14 2 | 865 13 4 | 820 12 0 | 933 6 4 |
| J. Mowlem & Co. | 362 5 10 | 1,095 0 0 | 1,050 15 0 | 1,025 0 0 |
| W. Wadey | 392 14 2 | 1,026 0 0 | 1,019 0 0 | 1,020 0 0 |

* Accepted.

CARDIFF.—For additions and alterations, 6, Cowbridge-road for Mr. Plant. Mr. David C. Salmond, architect. Quantities by architect:—

| | | | |
|---|---|---|---|
| S. Shepton & Son | £345 0 0 | J. Gibson | £298 0 0 |
| E. Turner & Sons | 328 0 0 | Knox & Wells | 275 0 0 |
| Cox & Bardoe | 300 0 0 | Haines & Son* | 257 14 4 |

* Accepted.

CARDIFF.—Accepted for widening Coedbychan-road, St. Fagan's, for the Llandaff and Dinas Powis Rural District Council. Mr. Jas. Holden, C.E., Queen's Chambers, Cardiff:—

Jos. Wood Whitchurch, Glamorganshire £132 19 6

ERITH.—For erecting new offices, &c., for Messrs. Cannon & Gane, High-street, Erith. Mr. W. Egerton, architect :—

| | | | |
|---|---|---|---|
| Stickland & Chandler | £1,398 11 9 | T. Knight | £1,599 0 0 |
| Kirk & Randall | 1,685 0 0 | Emeny Bros. | 1,486 17 0 |
| G. H. Gunning | 1,620 0 0 | J. Widford, Snodland (accepted) | 1,422 0 0 |

FEATHERSTONE (Yorks).—Accepted for the erection of a villa residence, for Dr. Steven. Messrs. Garside & Keyworth, architects, Ropergate, Pontefract :—

| | |
|---|---|
| *Bricklaying.*—A. Sutton, North Featherstone | £250 0 |
| *Joinery.*—T. G. Wright & Son, Castleford | 124 10 |
| *Plumbing.*—H. Foster, Castleford | 67 7 |
| *Slating.*—G. Stewart & Son, Pontefract | 48 0 |
| *Painting.*—H. Butler & Son, Pontefract | 6 15 |

GOSPORT.—For the erection of "Old Northumberland" public-house, High-street. Mr. A. H. Bone, architect, Cambridge Junction, Portsmouth. Quantities by architect :—

| | | | |
|---|---|---|---|
| Chas. Jobbins | £2,457 | Jas. Crockerell | £2,050 |
| Jno. Croad | 2,230 | H. Jones | 1,982 |
| C. Harding | 2,095 | C. J. Lear & Son | 1,965 |
| W. E. Lane & Son | 2,169 | C. M. Dash, Gosport* | 1,919 |

* Accepted.

HEMEL HEMPSTEAD.—For the erection of the new manse, for the Congregational Church, Hemel Hempstead, Herts. Mr. W. A. Fisher, architect, Hemel Hempstead, and 16, Finsbury-circus, E.C. :—

| | | | |
|---|---|---|---|
| Darville | £1,230 | Horne, Hemel Hempstead (accepted) | £1,045 |
| Smith | 1,135 | | |

HORNCHURCH.—For the erection of a mixed school for 250 children, and teacher's residence, with offices, &c., South Hornchurch, for the School Board. Mr. E. M. Whittaker, architect, 1, Gresham-buildings, Basinghall-street, E.C. :—

| | | | |
|---|---|---|---|
| J. Jackson | £3,275 4 6 | J. S. Hammond & Son | £2,899 0 0 |
| J. Joliffe | 3,160 10 0 | T. Bruty, Hornchurch (accepted) | 2,707 0 0 |
| General Builders, Limited | 3,016 0 0 | F. J. Coxhead | 2,660 10 0 |
| H. J. Carter | 2,951 10 0 | John Gordon | 2,535 10 0 |

ILKESTON.—For making a new street (Haddon-street), for the Corporation. Mr. H. J. Kilford, Surveyor, Town Hall, Ilkeston. Quantities by Mr. H. O. Towner, assistant surveyor, Ilkeston :—

| | | | |
|---|---|---|---|
| J. Ford | £335 17 | Hawley & Son | £282 0 |
| Holmes & Co. | 299 0 | Cox & Son, Ilkeston* | 187 0 |

* Accepted.

LONDON.—For the erection of four semi-detached houses, to be erected in Wiverton-road, Sydenham, for Mr. Harry Francis. Messrs. Douglas Young, & Co., architects, 51, Coleman-street, City :—

| | | | |
|---|---|---|---|
| James Smith & Sons | £2,660 | E. J. Taylor | £1,970 |
| W. V. Goad | 2,600 | Newmans, Limited | 1,968 |
| T. R. Roberts & Co. | 2,566 | G. J. Kick* | 1,878 |

* Accepted at £1,840.

LONDON.—For the supply of about 500 tons of broken flints, for the Vestry of the Parish of St. Mary Magdalen, Bermondsey. Mr. Frank Sumner, Surveyor, Town Hall, Spa-road, S.E. :—

Murrell & Co. ..... 4s. 8d. per ton.
Smead, Dean, & Co., Sittingbourne (accepted) 4s. 5d. "

MARKET HARBOROUGH.—For erecting butcher's shop and Co-operative Hall, Coventry-street, for the Market Harborough Industrial Co-operative Society, Limited. Messrs. Coales & Johnson, architects, Corn Exchange, Market Harborough :—

| | | Extra for tiled dado. |
|---|---|---|
| G. Henson | £1,460 0 0 | £45 0 |
| W. Pettefer | 1,399 0 0 | 32 0 |
| H. Martin | 1,393 0 0 | 30 0 |
| J. Hufford | 1,369 0 0 | 33 18 |
| G. L. Martin | 1,318 0 0 | 36 0 |
| G. Jarman | 1,313 1 3 | 35 14 |
| T. Hickman, Harborough* | 1,276 0 0 | 35 15 |

* Accepted.

[Architects' estimate, £1,275.]

MIDDLEWICH.—Accepted for paving and asphalting Queen-street, for the Urban District Council. Mr. Reginald T. Worth, Surveyor, Town Hall Chambers, Middlewich :—

| | | s. | d. |
|---|---|---|---|
| S. Hutton, Altrincham. | Asphalting, per sup. yard | 2 | 2 |
| | Paving 4 in. setts do. | 4 | 6 |

[At schedule of price.]

MORECAMBE.—Accepted for alterations and additions to No. 9 The Crescent. Mr. J. Parkinson, architect, 67, Church-street, Lancaster :—

| | |
|---|---|
| *Masonry.*—R. L. Dilworth, Lancaster | £270 8 |
| *Joinery.*—J. Hartley, Lancaster | 161 10 |
| *Slating and Plastering.*—W. J. Cross, Morecambe | 56 0 |
| *Plumbing, &c.*—R. B. Abbott, Morecambe | 69 16 |

RADLETT (Herts).—For the erection of village hall, for the Committee. Mr. A. G. Bond, architect, 51, Corn-street, Bristol. Quantities by Mr. W. L. Bernard :—

| | | | |
|---|---|---|---|
| J. G. Cowell | £1,253 0 0 | Geo. Wiggs | £1,080 0 0 |
| Clifford & Gough | 1,242 0 0 | C. W. Reed | 1,040 0 0 |
| Gough & Co. | 1,239 0 0 | Burnell Bros. | 1,030 0 0 |
| G. H. Taylor | 1,211 19 6 | Whitehouse & Verdon, 347, Battersea Park-road, London, S.W.* | 982 12 7 |
| J. P. White | 1,173 0 0 | | |
| J. Darvill | 1,150 0 0 | | |
| Boff Bros. | 1,097 0 0 | | |
| W. B. Neal | 1,093 0 0 | | |

* Accepted, subject to modifications.

ROYTON.—Accepted for the construction of about 900 lineal yards of sewers, &c. (Contract 19), for the Urban District Council. Mr. T. S. M'Callum, Engineer, 4, Chapel-walks, Manchester :—

Geo. Freeman & Sons, Oldham ..... £1,439

WALSALL.—For the construction of about six miles of earthenware pipe sewers, &c., in connexion with the sewerage of Pelsall and Rushall, for Walsall Rural District Council. Mr. J. E. Willcox, engineer, Union-chambers, 63, Temple-row, Birmingham :—

| | | | |
|---|---|---|---|
| Henry Roberts | £15,800 0 0 | C. Walker & Co. | £11,016 13 3 |
| C. B. Williamson & Co. | 14,959 2 2 | Herbert Holloway | 10,875 4 3 |
| J. White, jun. | 14,127 10 6 | John Roberts | 10,230 0 0 |
| G. Read & Sons | 12,309 15 0 | Ford & Hudson | 9,852 0 0 |
| Jacob Biggs | 12,204 0 0 | George Law | 9,597 0 0 |
| Currall, Lewis, & Martin | 11,652 4 6 | Thomas Vale | 9,420 6 9 |
| | | John Mackay, Smethwick* | 9,330 7 3 |

* Accepted.

WARLINGHAM (Surrey).—Accepted for building residence. Mr. G. Gordon Stanham, architect, 100B, Queen Victoria-street :—

Speechley & Smith, Richmond ..... £3,834

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